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ABSTRACT

This document sets forth the procedures necessary to understand and utilize the internal characteristics of the Automated Instructional Management System (AIMS), a computer-based system for the management of educational processes. In this manual, overall design concepts governing the development of AIMS are specified; and overview of its capabilities is given; and details of the AIMS operational phases, system structure, and program structure are provided. Flowcharts, control decks, card layouts, and tables of file structures are included in the appendices. For related documents in this series, see SE 016 060 through SE 016 064. (DT)

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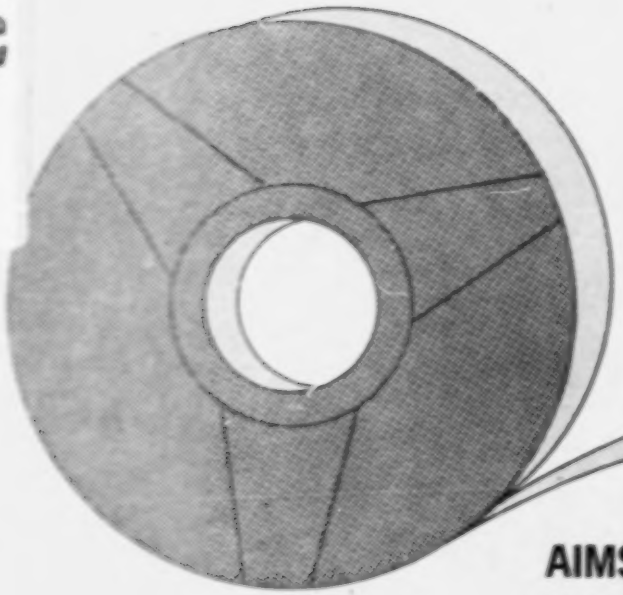

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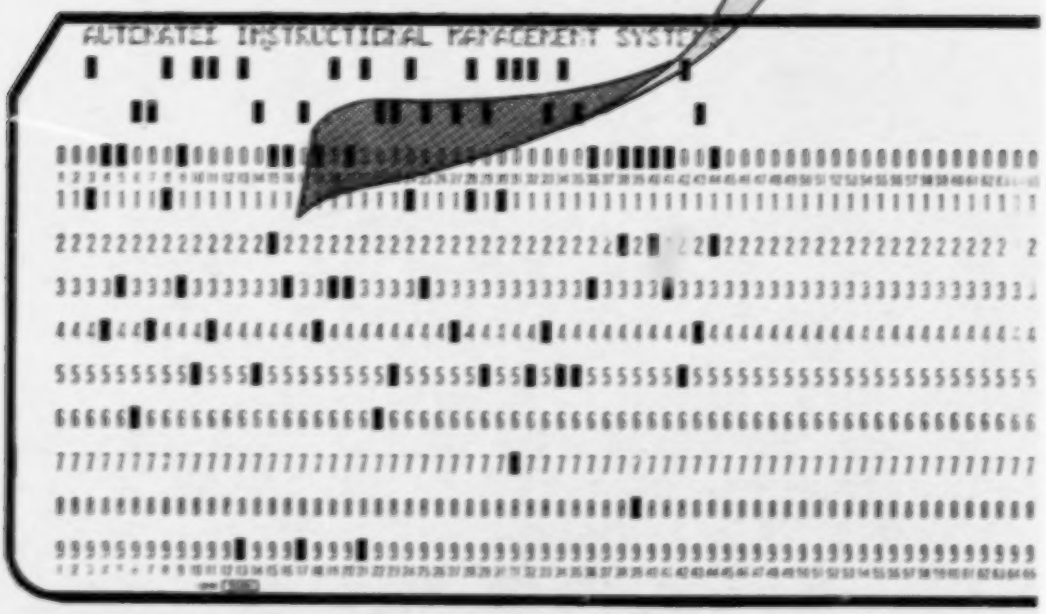

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AUTOMATED INSTRUCTIONAL MANAGEMENT SYSTEM

AIMS VERSION III

System Manual

Prepared by the Staff of

The Advanced Systems Laboratory

Ernest N. O'Dierno, Director

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been developed with U. S. Office of Education funds
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FOREWORD

The Automated Instructional Management System (AIMS) has been designed to monitor, score, and evaluate individual students, groups of students, and curricular content in a course environment designed for educational management. Design philosophy includes providing course administrators with a meaningful analysis, and constructive assessment of student or group performance, within the environment of a course created for computer management. Since the system requires a minimum of "installation tailoring", AIMS is capable of servicing most user requirements once adapted to the course environment. Through its modular construction, it is possible to incorporate other student input techniques for time-shared and teleprocessed implementation.

AIMS Version III was generated to be as versatile as possible, without prohibitive INPUT/OUTPUT requirements. To insure versatility and compatibility, it was designed around IBM System/360, and was generated with the Model 30/Release 20 IBM Disk Operating System (DOS).

The overall design concepts governing the development of AIMS constitutes:

- Machine independence to the maximum possible extent-can be adapted to a wide variety of machine configurations
- Creating, maintaining and accessing a large data-base, relevant to student curricular, pedagogical, and administrative aspects of a given scholastic environment
- Creating, maintaining, and accessing sub-files containing meta-data
- Providing printed analyses of past, current, and future student progress throughout the scholastic environment
- Generating an adaptive feedback loop through which the system can modify its multiple-model simulator to reflect current conditions within its sub-files

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The system, through the media of feedback and analysis, incorporates the necessary procedures for updating and optimizing the general level of instruction and testing

Extending into the Behavioral Psychology environment enables AIMS to produce a matrix showing the relationship between Terminal Objectives and Enabling Objectives learning or skill category, media type, and each individual question. The inclusion of a validation capability has made AIMS the ideal vehicle for experimental curriculum analysis

The ultimate aspiration in the development of the AIMS System, is toward the achievement of a Generalized Educational Management System (GEM), designed to encompass the totality of the educational environment in which it operates. GEM is based on an advanced data file access/retrieval system, with innate adaptive feedback characteristics. The Sequential Access File Entry System (SAFES) provides a database capable of supporting the operation of virtually any kind of process model. A generalized simulator, which effectively becomes a unique computer language, could be used to develop models of a wide range of educational environments, emulating discrete aspects of the education sphere.

The basic structure of a Generalized Educational Decision Structure (GEDS) is created, and specified, as educational process information is fed into the system. Upon specification, the simulator reduces to a model of an aspect of the educational environment. Four such models, which can be generated by the simulator, are:

- Community Subsystem...providing output of Earning Potential, Job Opportunities, Occupational Acceptance Levels and Attitude Values.
- Instructional Process Subsystem...resulting in Change in Attrition, Change in the Number of graduates, and Change in Achievement output information.
- Cost Subsystem...giving Total Program Effectiveness, Improved Resources, and a Computed Cost Listing as end products.
- Instructional Process Input System...For the pupil population in the program, outputs change in Achievement, Change in Attitude (index of learning difficulty) to School and Cost Effective submodels.

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AIMS VERSION III
SYSTEM MANUAL

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1. AIMS III OVERVIEW

The Automated Instructional Management System, Version III is a model computer-based system for the management of the educational process. The system, as designed, applies to several areas of traditional academic courses of instruction. Its performance demonstrates the capability to individualize the specific instruction presented to each student, and to optimize the extraction of that information inherent in every interaction between the student and the educational process. This information pertains to the student and his capabilities, the process characteristics, and the teaching efficiency of their mutual interaction.

AIMS III has been structured to store and analyze the results of every test or assignment, participated in by the student, and to transform this data into a quantitive assessment of:

- Individual Student Performance and Capability
- Validity of a Given Assignment or Test
- Group Performance

Based on these assessment results, AIMS provides prescriptive recommendations to assist students in low achievement areas.

System input creates a versatile data base, operating within an efficient file handling environment. The necessity of handling large data blocks, associated with system operations, results in a flexible, modular design capable of accepting a wide range of input formats and sources, and generating multi-purpose output reports.

The actual running operation of AIMS III is intended to minimize the handling of large amounts of data, and to maximize report utility.

At the start of a semester, students involved in the course are registered, and a course outline is entered which initializes the system.

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As a course progresses, student response data is entered and, unless requested, maintained in a response file.

Subject to demand the system can be requested to score and analyze selected lesson segments, with report output. This demand request processing, permits the retaining of output reports, without the backing-up of input data; and also allows for consideration of separate groups of assignments at any time. Reports contain scoring of lessons and tests, remedial instructions to a student, validation information on group and individual performance.

II. SCOPE: This document sets forth the procedures necessary to understand and utilize the internal characteristics of the Automated Instructional Management System (AIMS - Version III).

III. ABBREVIATIONS:

The following abbreviations used in this manual are consistent with AIMS System standards:

- AIMS - Automated Instructional Management System
- CSN - Course Student Number
- CTIO - Card-to-Tape INPUT/OUTPUT
- EO - Enabling Objective
- JCS - Job Control Statement
- MBO - Measurable Behavioral Objective
- TO - Terminal Objective

IV. ASSOCIATED DOCUMENTS

A. APPLICABLE DOCUMENTS: The following documents, although not forming a part of this manual, may be used in conjunction with this document:

- A350 Users Manual...Automated Instructional Management System
- A370 Program Logic Manual...Automated Instructional Management System
- A380 Operator's Guide...Automated Instructional Management System

B. FORMS USED:

- Port-a-Punch Cards
- OpScan Forms

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C. APPENDICES:

A Flowcharts
B Control Decks
C Card Layouts
D Tables

V. AIMS III SYSTEM STRUCTURE

The design criteria of AIMS III characterized by the following operational phases, is illustrated in Chart 1. Each phase is run independently for specific purposes, but all are required to completely process a course. The system structure is illustrated in Chart 2.

- SYSTEM INPUT PHASE...is associated with the initialization of the system, and involves information which is entered only once - at the beginning of the course. This information consists of: Student Background and Enrollment, Question and Answer Matrices, and Course Structure.

- OPERATIONAL INPUT PHASE...involves that data which is entered and accumulated as the course progresses. It consists primarily of student responses to course work such as pre-test, post-test, study guides and homework assignments.

- REPORT GENERATION PHASE...in this phase, student responses are correlated with course description and background data, to produce evaluative functions. Analytical results are computed; and reports on individual, group, or course performance are generated. Modular construction permits facile styling of report formats to meet user needs.

A. SYSTEM INPUT PHASE: There are certain internal Direct Access AIMS Files which must be created, maintained, and updated for each course. These files which are created during the System Input Phase, and which are related to the systems initialization, are divided into three major categories:

- Student Background and Enrollment Data
- Header Information (question and answer matrices)
- Question (MBO) Descriptor Information

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1. STUDENT BACKGROUND AND ENROLLMENT - is concerned with the identification of those students whose performance is to be monitored by AIMS, and the entering of data pertinent to their academic background. This data includes:

   - High School Average
   - Rank in Class
   - I.Q.
   - Grades in Pertinent High School Courses
   - Reading
   - SAT Math
   - SAT Verbal
   - Elementary Algebra
   - Geometry
   - Trigonometry
   - Intermediate Algebra
   - Calculus
   - Physics
   - Math Achievement

   Included in this section is the calculation of a Student Capability Index, based on student background data supplied to the system. The capability index is comprised of an average of the background categories, after some normalization has taken place. It is essentially a weighted average of student background data, where the statistical weights are determined by correlations of background data with eventual performance. This is a predictive index, continually undergoing evaluation, which will ultimately be a guide in considering student suitability for a given course. This index is still experimental, and is course specific.

2. HEADER INFORMATION - consists of a series of answer matrices containing the correct answer for each question on each test. Answer matrices may be multiple choice, four or five possible responses per question; or they may be for test types requiring other than the major four or five possible response.

3. QUESTION (MBO) DESCRIPTOR - in order to best utilize the instructional management and prescriptive tutorial capabilities of AIMS, the system must be used in conjunction with a course properly structured in a multilevel format with milestone definition of course objectives. This course structure, illustrated in Chart 3 contains:

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- A Descriptor (key word) for each 'question' present in the course, known as an enabling objective (EO)
- A Descriptor for each logical group of questions, as well as a definition of that group, known as a terminal objective (TO)
- A Definition of those question groups which comprise a course unit (lesson).

By relating each question or group of questions in the course to particular course objectives, definitive conclusions based on student responses can be reached regarding:

- Overall Performance in a subject area or skill, within the course
- Question Validity relative to desired objectives.

B. OPERATIONAL INPUT PHASE: The operational input phase of AIMS is concerned with the assimilation of that data which is accumulated as the course progresses; namely, student responses to assignments and tests. To facilitate data handling, these responses are currently read from Port-a-Punch cards, or OpScan forms (pre-processed through an OpScan Reader). These response forms are completed by the students, and merely require a visual check by the instructor prior to submission.

This phase is divided into three levels:

- The Lowest Level...reads response data, and converts it to a standard AIMS Response Record format.
- The Second Level...validates the response data with respect to legality of student number, lesson number, question number, etc.
- The Third Level...validates the data with respect to order and sequence of responses, and location in course structure. This level structure permits maximum flexibility in input requirements. It is only the lowest level which is specific to the input mode; thus allowing a simple modular change for a different input source such as Mark Sense Cards.

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C. REPORT GENERATION PHASE: is designed for flexibility and selectivity. This phase of the system creates and maintains detailed records on student performance, course elements, and group performance. It also makes various report modules available by accessing the files created by previously run AIMS processes.

1. Student Performance - can be evaluated within the course from a statistical view, and pedagogical assumptions on the part of the designer can be validated.

2. The Scoring Segment - of this phase has access to the student response information as well as the course description data. By cross-referencing these files, each course unit is scored, and tallies are maintained for each possible answer in the unit. Once scored, statistical analyses are performed to determine mean scores, maximum and minimum of scores, standard deviations, etc. In addition to these functions, the system tallies for each question the number of students in each performance quartile who made an error on that question. It is the analysis of this data which aids in question validation. A question's validity might merit closer scrutiny if it is found that more students in the lower quartile responded correctly than in the upper quartile.

3. Output Reports - are each programmed as a separate module, and the number of modules is variable. Required tapes and disk files are accessed and processed by built-in file handling routines. The user may select desired reports by supplying a request control card which identifies the specific reports requested.

   A determination should be made as to which reports are necessary for efficient course management. Reports can be produced which are directed toward three levels of interest. They are:

   - Student
   - Instructor
   - Course Development Analyst

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The reports currently available include data on:

- Individual and Group Course Performance
- Group Remedial Instruction (GRI)
- Statistical Information on Group Performance
- Question Validation Information

D. PROCESSING: All processing functions in the AIMS III System take place during each step of the three system phases. This includes error checking of card formats and keypunching. Checking is also performed to determine user violation of certain system and disk allocation limits. The specific processing functions are:

1. System Input Processing - This phase creates the data base from which a student may be processed through a course. Certain steps are required, and processing takes place with each step, as set forth below:

   a. Header Function (correct answer matrix)... is the first step in the loading of course data on to the AIMS III files. This function actually describes the course structure to the AIMS III System, and must be successfully executed before any other system input functions can be performed.

   b. Question (MBO) Function...loads additional data into the course structure. A cross-reference check with header input is made to determine unintentional user violations of course structure. This function is not required on the lowest level of student grading.

   c. Student Input Function...registers a student in a course, and is independent of course structure. Course Student Numbers (CSN) are assigned to each student, consecutively, starting with number one, in the order of input to the system. Along with card format and keypunching error checking, the AIMS III Capability Index calculations are also performed.

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d. Operational Input Function...prepares students' work for system processing which are screened for:

- Validity
- Omissions
- Usage of Input Media

e. Report Generator Function...controls the processing and direction of a student through a particular course of study. Some student and instructor related functional tasks are:

- Student Related
  - Raw Grading of Work
  - Retrieving Student Direction Information
  - Scheduling the Student for Additional Work Sessions
- Instructor Related
  - Capsulization of Student Work
  - Statistical Presentation

Students work is basically reorganized and processed into a more comprehensible and readable form, for both student and instructor.

VI. AIMS III PROGRAM STRUCTURE

Before student or course information can be stored, certain Direct Access files must be created in order to successfully run a course under the AIMS III System. All files are not required for each type of operation but all are included in each deck to simplify procedures and prevent omissions. They are as follows:

- Lesson Scratch File
- Student Background File
- Header File
- Student Score File
- Directory File
- Text File
- Question File
- System File

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A unique control (JCS) deck is required for each course run, as the file names cannot be identical. The control decks presently being used are listed in Appendix B.

Previous sections have described the functional aspects of the AIMS III System. The section is concerned with the program structure which accomplishes these tasks. In the following sections each program, its inputs, outputs and file structure will be covered (Chart 4) From the programming aspect, AIMS is divided into two major programs:

- AIMSMAIN, the first program, is associated with two system phases

  Phase I - System Input
  Phase II - Operational Input

- REPORT GENERATOR, the second program, is System Phase III.

A. AIMSMAIN: The core of AIMS is AIMSMAIN, which is concerned with all operational aspects of AIMS, and encompasses System Input and Operational Input. The output of AIMSMAIN is a file containing all relevant scoring and evaluative information.

1. Phase I - System Input - involves student enrollment and background data, question and answer matrices, and a description of the particular course to be managed as illustrated in Chart 5. If more than one group of student is being processed through an identical course, some of the disk files may be shared. Each course requires unique Student Background and System files, with unique file names. These inputs initialize the AIMS operation.

   a. Student Background and Enrollment Data... (Chart 6) must be input on cards for every student taking the course. The maximum number of students allowed in any single course is one-hundred and eighty five. The input of student background information is multi-purpose - it accomplished the following:

      - Assigns Course Student Number
      - Creates Student Roster
      - Computes Capability Index
      - Stores Background Data

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The student background input card, which provides the pertinent student data is structured in Card Layout 1. Table 1 contains the structure of the Student Background and Enrollment file which has been structured with a growth provision pointed towards future program capability.

At the time of registration, the program sequentially assigns a registration number to each student according to the order of enrollment, in addition to any school identification number. This number cannot be pre-assigned other than by ordering the sequence of input cards. The course student number (CSN) is the primary means of identifying a student within the system. All reports refer to this number for referencing and grading.

Students dropped from the AIMS Background Roster are flagged, but not actually removed from the file, and the course student number cannot be reassigned. Once a student is dropped, all future AIMS processing will ignore the student's record.

Background data is stored on a tape, and a capability index is calculated (a weighted average of pertinent, scaled background). Future incorporation of adaptive feedback techniques will permit a dynamically modified weighted index.

The AIMS capability index calculations are based on the student background data supplied to the system. It is assumed that if any of the background data is equal to zero, it was not submitted, and that particular item is not taken into consideration. The capability index is comprised of an average of the background categories, after some normalization has taken place. Calculations are made when the data is input to the file, and the index is stored along with the remaining background information. The different categories and the normalizing functions, if applicable are:

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SAT Math Score (SATM-200)16)
SAT Verbal Score ((SATV-200)16)
High School Average
Rank((RANK+1)*10)
High School Physics Grade
I.Q. (IQ/2)
Reading Score (READ*7)
Both Algebra Scores
Geometry
Calculus

NAVY VERSION

SAT Math Score (SATM-200)/6)
SAT Verbal Score (SATV-200)/6)
High School Calculus Score
(If not supplied, the SAT Math Score is used)
High School Chemistry Score
Math Achievement (MTAACH-200)/6)
Navy Rank (NAVRNK/8)

The output of the Student Background File consists of a report containing all of the relevant student information for use by the program. There is one line of information printed for each student. At the end of the report, a message is printed informing the user as to the number of students contained on the file, and how many are remaining in the course. The date each student is input is assigned to the student's record, and printed with each report.

The above are averaged together to produce the capability index.

b. Course Description Information...(Chart 7) is input by two logical groups:

1. Header Cards - which are Port-a-Punch cards, read by a binary card routine, and consist of lesson identification data, and a correct answer matrix for each question, on each test. The Header Card structure is outlined in Card Layout 2.

   Header card information is stored in the Header file (Table 2), and is used to allocate storage space in the Question (MBO) File (Table 3), thus permitting dynamic storage allocation in Fortran. The Header File must be prepared before any further functions can be performed (Chart 8).

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A temporary tape, which is prepared prior to storing, is created using a Header-Check routine to determine if:

- The lesson number of the first temporary file is greater than the last number in the permanent file; and that it;
- Ascends sequentially by one, through the last lesson number of the temporary file, which should be less than forty.
- There are ten or less headers per lesson
- Each Header is unique according to lesson number, segment number, and type

The Header-Check routine will cause the system to list the permanent headers consisting of all previous updates.

If the file is in order, the temporary file can then be stored on the permanent file by using the Header-Store routine, which instructs the system to take the temporary file, and add to, or replace data in the permanent file.

This must be done for the Headers in a particular lesson before any further functions are performed. All the Headers for a course may be stored at one time, or, they may be done for sections at a time.

The only change allowed in an existing Header Record in a permanent file is one that involves answer matrices. (refer to Chart 9 - File Maintenance and Updating).

A Header File Listing, of both permanent and temporary Header Files is the output of this segment.

2. Question (MBO) Descriptor Cards - (Layout 3) may be read once Student Background and Header information has been entered into the system. These cards identify a question position within a course. They also contain the correct answer,

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with key words describing the question, as well as a prescriptive recommendation in the event the question is incorrectly answered. There can be only one Question File Record (Chart 12) for each question in the Header File.

The basic terms which define the required course structure are:

- Volume (lesson,week,period,etc.)
- Type
- Segment
- Course Student Number (CSN)
- Measurable Behavioral Objective (MBO)
- Terminal Objective (TO)
- Enabling Objective (EO)

The first four terms refer to the structure of tests, study guides, homework, or assignments. The last three refer to learning objectives attached to questions in a course.

A volume is the basic subdivision of work within a course structure. The term "Type" is used to identify tests within a volume as follows:

Type Number	Test
1	Pre-Test
2	Post-Test
3	Homework
4	Study Guide
5	Assignment

A total of five types is permitted. In order to facilitate there being more than one of the same type within a volume, the term segment is used.

Learning objective terms are used to identify objectives contained on the question descriptor cards. A Measurable Behavioral Objective is made up of the Terminal Objective, and the Enabling Objective. This information is used to provide remedial assignments, and to schedule group remedial sessions.

Terminal Objective (TO) information from these cards is stored in the Directory File (Table IV) with a chain pointer to the first question in a given TO group. This permits the indexing of question groups by TO.

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Questions in any test can be related, not only to the test itself, but also to that portion of the curriculum which they were designed to evaluate. Question information is then stored in the Question File, and pointers are placed in the Header File to permit accessing questions by deck.

The only information that may be replaced in a Question Record includes the MBO description, correct answer, and prescription.

The available outputs include a Question (MBO) File listing and a Directory File listing.

2. PHASE II OPERATIONAL INPUT - is the input portion of AIMSMAIN that maintains and processes the input to AIMS which occurs in the process of course management. This input is screened for:

   - Validity - the work must be within the course structure
   - Omissions - all data required to identify work within the course structure must be present and accurate.
   - Student Usage of Input Media - Port-a-Punch cards cannot be multi-punched in certain fields; a CSN has to be present on all student work input.

   The greater portion of this material is Student Response data.

   a. Student Response Data...input utilizes both Port-a-Punch cards and OpScan forms, which are prepared as the student engages in course units. (Layouts 4 and 5).

      Port-a-Punch cards are read to tape in a binary card routine, and the program validates it as to order, student number, course, lesson and segment number.

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The AIMS System allows a maximum of forty-eight questions per test. There are twenty-four questions per card. Therefore, there can be a maximum of two cards per test. The response information (Table 4) is put out on a student response tape (Chart 10) for that course unit, and sorted into a Master Response File (Chart 11) containing all previous response data. The Master Response File structure is outlined in Table 5. The CTIO program, developed for the reading and reformatting of binary cards, is used both in this phase and the Header Card routine.

OpScan Response forms are processed by Operations through a pre-processor and the computer interface programs. There are two types of OpScan forms presently in use; one for Pre-Tests and Post-Tests, the other for Study Guides. The final output tape contains complete Student Response records, sorted in proper order for Master Response File processing. Procedures for the use of OpScan forms require that the tape from the Optical Scanner be translated into the record format, identical to that produced by the CTIO routine. A series of unscramble and sort programs are used to produce the final result.

B. REPORT GENERATOR: This phase of the system, (the second major program), is a collection of report modules, and file handling routines. The program is divided into six phases. Most of the individual routines are written in FORTRAN, with three routines written in Assembler Language. Should re-phasing be required, refer to the AIMS III Program Logic Manual A370-670, Report Generator Phase Structure. The AIMS III Report Generator is concerned with keeping the most comprehensive records possible on all aspects of the course interaction with the students, from a student, course, and instructor viewpoint. Basically, it processes and re-organizes student responses into a more comprehensible and readable form for both student and instructor. It computes analytical results, as well as generates reports on individual, group, or course performance. The AIMS Report Generator general structure is illustrated in Chart 13.

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1. Student Related Functions -

   - Raw Grading of Student Responses- calculating of grades using appropriate grading methodologies.
   - Retrieving Student Direction Information (Table 6) - linking student work to a course, and providing additional course insight for student.
   - Scheduling Additional Student Work Sessions - determining which students should participate; stressing weak areas of the course.

2. Instructor Related Functions -

   - Capsulization of student work - tabular formated reports for various types of grades; storing and updating of historical data on cumulative averages; determining status of Student work processing.
   - Statistical Presentations - frequency distribution bar charts; item analyses on student responses.

3. Student Response Grading Methodologies - There are three distinct grading algorithms used in AIMS III to evaluate student responses.

   a. Pre-Test, Post-Test, and Assignment Materials... are graded using the standard percentage algorithm - the total number of correct questions over the total number of questions required. A student is marked as "incorrect" if he has indicated more than one correct response.

   b. Homework and Study Guides...are processed using special algorithms. These are instructor graded functions utilizing a five response mechanism. Where the instructor has given an "A" grade for a homework assignment, the student receives 100 for the question; a "B" is equal to 80, a "C" is equal to 60, a "D" is equal to 30, and an "E" is equal to zero (0). These numeric

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values are summed, per response, and the sum is divided by the number of questions utilized. The result is the grade for the homework assignment.

The study guide algorithm is based on a five response media. It will function for another response type media; but it will produce a biased result. This algorithm is based on a multi-punch theory. That is, if the first student response to a question is correct, it is graded as "100"; if two responses are required, the grade becomes "80"; three responses would be a grade of "40"; four responses would be a grade of "10", and five responses, a zero ('0'). The sum of the subgrades divided by the number of questions per work, is the final grade for a study guide.

4. Report Generation - The AIMS III Report Generator is designed to operate off-line from the main AIMS system; and is constructued in a modular form. Each report format is programmed as a separate module, and the total number of modules is easily varied. Report data is available to this phase by accessing files previously created by the AIMS System.

   After program initialization, reports may be generated by using a sorted Student Response Tape, or the Master Response tape with the Report Generator. A Request Deck used to request reports contains a Report Number Card (Layout 6) which when read instructs the program as to which specific reports have been requested. The program then selects the first report requested, and reads a Report Content Card (Layout 7), which describes the particular lesson, segment, and type the report is for. The program then draws the proper data from the appropriate AIMS files, organizes it for output, and transmits it to either printer or tape. Certain reports also require a Special Data card which has no set format.

   Reports can be produced for every test within a lesson by using one Request Deck. But, processing of more than one volume within the same deck is not permitted.

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The reports modules currently available are explained below, and output formats of these reports are included in the AIMS III Users Manual A350-670.

REPORT NO. 1 - Individual Student Performance

This report is designed to give the student a basic question by question evaluation of his work on a given test. Tests are identified by lesson, type and segment. Students are identified by course student number, name, student ID number, section and group. The maximum number of questions in a test is 48. This corresponds to the double port-a-punch card maximum. Each line of the report gives the student the following information:

- Question Number
- Correct or Incorrect Answer
- Measurable Behavioral Objective (MBO) Description
- Prescriptive Assignment

The criteria for correct or incorrect is obtained by matching the student's response record with the correct answer in the AIMS HEADER file. If a match is found, a "c" is printed; if not, a "w".

MBO descriptions and the prescriptive assignments are obtained from the AIMS Question File, where there is a record for each question on the test. If a student answers the question correctly, this column is not filled in. If an incorrect answer is recorded, the corresponding MBO description and prescriptive assignment is printed on the line for that question.

At the bottom of the report, the students raw score is printed and the message "You must see your instructor to discuss this test" is produced if more than a certain number of questions are missed.

To request this report requires only the Report Request Deck, containing the Report Number and Report Content Cards. Special data cards are not needed.

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FILES USED:

Student response tape (individual or master)
Systems file
Header file
Question file
Background file

SUBPROGRAMS CALLED:

HEADPG (Entry point, PSEP)
GETIT (Entry points, FINDIT,GETMBO)
SUBGRD
IPASS

REPORT NO's 2 and 3 - UNASSIGNED

REPORT NO. 4 - HISTOGRAM

This is a frequency distribution of the number of students having scores of averages falling within various cells, or score spreads. As it is given both graphically and numerically, it summarizes the total performance record on any individual test. It therefore provides a quick visual analysis of the entire student population. Features included are automatic scaling on both axis, and a zero value counter.

The graphic portion, a bar chart, shows the distribution of scores, while the numeric portion gives the actual number of students falling within any range of scores.

The heading identifies the course and test requested. Course name, lesson number, segment, and type are taken directly from the Report Content Card.

The vertical axis represents numbers of students. The physical length of the axis remains the same, but there are four different scales available automatically, depending on the largest population of all the cells. Maximum values are 40, 80, 120, and 160 respectively.

The horizontal axis contains two sets of values, the length of which is determined by the number of questions in the test. There is one cell for each question.

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The top line "scores" ascends from left to right, with all the possible grades that can be attained. The bottom line "students" lists the number of students falling into each grade population.

The height of each bar on the chart, illustrates the number in each grade cell. Zero values are recorded separately, and listed at the bottom of the printout. A zero can be the result of a student scoring zero, or missing the exam.

The Histogram can also be applied to the scores achieved on a particular homework assignment; although primary application is for Pre-Test and Post-Test. Requesting this report requires only the Report Number and Report Content cards in the Report Request Deck.

FILES USED:

Student response tape
Header file

SUBPROGRAMS CALLED:

GETIT (entry points, FINDIT,GETMBO)
SUBGRD
IPASS
HEADPG

REPORT NO. 5 - COURSE STRUCTURE SUMMARY

The desired course, which resides in the Question File, is listed in tabular form. This listing is in the order of volume number, segment, type, question number, TO, and EO, description, prescription and correct answer. The entire course is listed up to that part already loaded onto the file at the time of the reports generation. The Course Structure Summary is created with the Report Request deck, with a Report Number card, and the Report Content card, which require an 05 punched in card columns 1 and 2, and the course name punched in columns 30 to 42 inclusive.

FILES USED:

Question file

SUBPROGRAMS USED:

HEADPG

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REPORT NO. 6 - ITEM ANALYSIS

This report lists, by question, the number of students who chose each of the possible selections. The questions are listed by number, and the answering criteria is printed out from the list at the top of the report. The purpose of the Item Analysis report is to provide the course instructor with a picture of the student responses to Pre-Tests, or Post-Tests. Some of the problems this report might indicate consists of:

- Question Misinterpretation
- Incorrect Header File
- Misleading Question
- Poor Instruction Techniques

This report is designed to handle tests of up to twenty-four questions. The questions are listed, by number, down the left side of the page, and the responses A-E are listed across the top. Total answers are printed out to the left for each question.

Within the above framework, two matrices are filled in. The first, lists the number of students who chose each response for each question. The second matrix, places an asterisk next to the total for the correct response. The value printed for total answers, is the number of students who responded to each question. Producing this report simply requires a report number, and report content card in the Report Request deck.

FILES USED:

Student Response tape
Header file

SUBPROGRAMS USED:

GETIT (entry point; FINDIT)
IPASS

REPORT NO. 7 - GROUP REMEDIAL INSTRUCTION (GRI)

The objective of this report is to provide a complete analysis of the problem areas for each student in the course. Students missing the Terminal Objective (TO) more than a pre-specified percentage of times are flagged for remedial help, and assigned to remedial sessions on the basis of their weakest points. The

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criterial level at which the students work is judged to be unsatisfactory, can be varied by the user.

This report consists of the five following separate report sections:

SECTION 1 Terminal Objective Cutoff Level contains a complete list of all terminal objectives (TO) in the lesson and the respective cutoff levels. The terminal objective cutoff level is the percentage level of incorrect answers, out of the total number of questions asked, against a given terminal objective, above which a student will be flagged for remedial help. This level is chosen by, and input by, the user. For example: If there are twelve questions in a lesson which apply to terminal objective ten, and the cutoff level is set at thirty-three percent, then the student who misses four or more questions pertaining to that terminal objective, will be flagged for remedial help.

SECTION 2 Individual Student Analysis is a breakdown by student, of performance on each individual terminal objective (TO). The performance data presented for each TO is the students percentage error on the TO, and the corresponding cutoff level. The percentage error is the number of incorrect answers on questions pertaining to a given TO, divided by the total number of questions asked within the lesson on that TO.

SECTION 3 Terminal Objective Remedial Summary is a listing by terminal objective of the students who performed above the cutoff level set for a particular terminal objective. The TO is identified, as well as the students and their percentage error on the TO.

The TO is identified by lesson number, TO number, and the number of questions within the lesson, which refer to the TO.

Students are identified by name and identification number, and their percentage error on the TO is listed.

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SECTION 4 Remedial Session Lesson Plan contains terminal objectives assigned to the sessions according to the number of students who performed above the cutoff level for the TO. The TO's are distributed so that the number of students per session is more or less even. Sessions are numbered and the professor and location is given, along with the TO's for the session, their respective cutoff levels, and the number of students above the cutoff level.

There are two types of input the user has to provide for the planning of remedial sessions. First, the maximum number of sessions and maximum number of students allowed per session. Second, the professor's name and the location for the session should be provided.

The terminal objectives are assigned to the sessions, according to the number of students who performed above the cutoff level for the TO. An attempt is made to distribute the TO's, so that the number of students per session is more or less even.

There is one page of output for each session and the sessions are numbered giving the professor and location. The terminal objectives for the session are listed along with their respective cutoff levels, and the number of students who are above the cutoff level.

SECTION 5 Remedial Session Roster assigns students to their remedial sessions based on their percentage errors recorded for each TO. Students falling into more than one session will be directed towards the session covering their lowest performance.

The scheduler attempts to assign students to the session, covering their first, or second choice of TO's. A first choice, is defined as the terminal objective on which the student performed worst. A second choice, is the second worst. If because of session overflows, the scheduler cannot do this, the student is then assigned to a rejection roster to be manually assigned by the professor.

Data requirements for requesting AIMS Report 7 includes the report number card, the report content card and a number of special data cards. The report number and report content cards are standard for the AIMS Report Generator.

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The first set of cards following the report content card are the terminal objective cutoff level cards. There should be a card for each terminal objective and both data fields must be right adjusted. If a TO exists, but there is no cutoff level card, the system assumes the cutoff level to be zero. The entire set of cutoff level cards should be followed by a delimiter card.

The next special data card sets the maximum number of sessions, and the maximum number of students allowed per session.

The last set of special data cards provide the professors' name and the location of their sessions. This information can be recorded in free format anywhere within the 80 columns of a card. There must be as many cards submitted as the maximum number of sessions requested. Blank cards may be substituted if this information is not available.

FILES USED:

Student Response tape
System file
Background file
Header file
Question file
Lesson Scratch file

SUBPROGRAMS USED:

DECIDE
HEADPG
DIVIDE
CONKER
RIGHT
RANDER
INFO

REPORT NO's 8, 9, and 10 UNASSIGNED

REPORT NO. 11 VOLUME SUBMITTAL REVIEW

This report reflects the work submitted by each student in a given course. Assignments submitted and those not submitted are flagged to facilitate the planning of make-up exams and the validating of group statistics. In a self-paced course, this information may indicate student performance. It can also be

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utilized to check the Master Response File.

There is a line of output for each student in the background file, and each student is identified by name and course student number. Course materials listed include the following:

- Pre-Test
- Study Guides 1-5
- Assignment
- Homework
- Post-Test

Material which has not been submitted is marked "NO/S", and submitted material "SUB".

The report is printed by volume, and the students are ordered by course student number. When a report is requested for a given volume number, reports will be printed for that volume, and every higher numbered volume, to the end of the file. This permits the entire response master file to be reviewed by only requesting volume one. A request for the last volume placed on file will review only that volume.

Request data required to produce this report includes the report number and report content card in the Report Request Deck.

FILES USED:

Student Response tape
System file
Background file

SUBPROGRAMS USED:

SUBMIT (entry point; CHECK, GETCHK)
HEADPG

REPORT NO. 12 CLASS ROSTER

This is a basic listing of students in the background file. It contains only three pieces of information:

- Student Name
- Course Student Number
- Student ID Number

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Students are listed in order of course student number, and all names are printed, regardless of whether or not any students have been dropped.

Requesting this report requires a report number and report content card in the Report Request Deck. Information required on the report content card may include only the report number and course name.

FILES USED:

System file
Background file

SUBPROGRAM USED:

HEADPG

REPORT NO. 13 VOLUME STATISTICS

This is a one page report fixed format containing Group Statistics for Report Number 14. It is generated automatically, and prints out prior to Report 14.

REPORT NO. 14 INDIVIDUAL STATISTICS FOR HARVEY POLLACK INDICES

In this report, the Harvey Pollack indices are used to measure student performance. The major restriction placed on this report, is that there can only be one study guide for the course structure. The report will create erroneous results for a multi-segmented study guide course.

The input required to generate Report 14 is basically the same as for most reports in the Report Generator. The report number card performs the standard function in the output generator. The report content card controls the report's internal functions. The volume number signifies the desired volume to be graded, but if the response tape does not contain the indicated volume, the run will be terminated or the tape will be scanned for the proper volume. When the master response tape is used, the report will position the tape at the desired volume and grade the course, and included volumes, from that point until the end of file is reached.

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The type and segment numbers have to reflect all the possible types and segments that will be encountered in all the volumes to be processed. A warning message is printed out if a volume does not have all of the specified types and segments in the header file, for grading purposes. As long as the header file reflects the types and segments which are on the response tape, the report will function correctly.

Report 14 stores cumulative average data on the AIMS Score file (Table 7). Because of the nature of this data, certain limitations are placed on the actual volumes in a course for which a report is requested. A volume one may be requested, or, the next sequential volume (i.e., a volume ten after volume nine has been reported on) may be reported on without restrictions. If a Report 14 is requested for a volume nine, after volume ten has been reported on, an error condition will be issued for each students line of output, and a message is printed.

THIS STUDENT HAS COMPLETED WORK BEYOND THIS VOLUME.

To generate output on this student for the desired volume, a volume one has to be requested, utilizing the master response tape, this will zero the cumulative data, and initialize all averages correctly.

The two output reports generator by Report 14 (13 and 14) are basically of a self-explanatory nature. Report 13 is the Group Statistics which is fixed format and just one page.

Report 14 has a basic tabular format. Its length is a function of students enrolled in the course. Three messages are printed out, depending on various conditions.

"STUDENT DROPPED"

"THIS STUDENT DOES NOT HAVE ANY TESTS OR MATERIALS TO BE PROCESSED"

"THIS STUDENT HAS INSUFFICIENT MATERIALS TO BE PROCESSED"

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The last message is printed out if the student has not submitted one of the required works (pre-test, study guide, assignment homework, and post-test). Both reports page on volume.

FILES USED:

Student response tape
System file
Header file
Score file

SUBPROGRAMS USED:

CUM014 (entry points; GETCUM,LODCUM)
GRADE (entry point, HEDREC)
SUBMIT (entry points, CHECK,GETCHK)
GETREC (entry points, GRPST,PEP.13,GETRES)
MINO
MAXO
HEADPG
SUBGRD
SUMGRD
GETIT
IPASS

REPORT NO. 15 VOLUME SUMMARY

This report will grade an entire volumes work that has been submitted by the students enrolled in the course. It can also grade a single volume or an entire course master file.

Report 15 has a present maximum capability of 185 students enrolled in the course. The largest course structure is one pre-test, post-test, assignment, and one homework, all with one segment. The study guide can have up to five segments.

The report output is in tabular form and gives a capsule view of the volumes work, with all the pertinent information which is outlined below.

The Volume Summary stores cumulative average data on the AIMS III Score file. Because of the nature of this data, certain limitations are placed on the actual volumes in a course, for which a report is requested. A volume one report, or the next sequential volume, (i.e., a volume eight after a volume seven has been reported on), may be requested without

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any restrictions. If a Report 15 is requested for a volume eight, after volume nine has been reported on, an error condition will arise, and a message is printed:

(***ERROR***VOLUME NO., XXX HAS BEEN PROCESSED BY REPORT 15. REPORT REQUEST TERMINATED. TO GENERATE REPORT 15 FOR VOLUME NO., XXX REQUEST A REPORT FOR VOLUME ONE.

NOTE, XXX is the volume number requested by the user.

The report request, as indicated, is terminated.

To generate output for the desired volume, a volume one has to be requested, utilizing the master response tape, this will zero the cumulative data and initialize all averages correctly.

The standard AIMS Report generator sequence is required to generate Report 15. A report number card and a report content card are also required. The report number card performs the standard function. The report content card controls the Volume Summary internal functions. The volume number signifies the desired volume to be graded, but if the response tape does not contain the indicated volume it will not be graded. When the master response tape is used the report will position the tape at the desired volume and grade the tape from that point until the end of file is reached.

The type and segment numbers have to reflect all the possible types and segments that will be encountered in all the volumes to be processed. A warning message is printed out if a volume does not have all of the specified types and segments, but this will not effect the operation of Report 15.

The output is in tabular form with the students listed vertically. The student line contains the student name, section, and group number (if applicable), and the course student number. Directly after CSN the grades and averages are listed in order of pre-test, assignment, homework, post-test, performance index, cumulative average, and capability index. The capability index is calculated when a student is enrolled in the course, and is therefore a constant.

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If a student does not hand in a piece of material to be processed, two asterisks are printed out after a zero grade (i.e., 0.**). When a student does not hand in any material at all for a volume, a distinct message is printed out

"THIS STUDENT DOES NOT HAVE ANY MATERIALS
TO BE PROCESSED"

An additional message which is printed out is in the case were a student is dropped:

"STUDENT DROPPED FROM THE COURSE"

FILES USED:

Student response tape
Header file
System file
Background file
Score file

SUBPROGRAMS USED:

CUM015 (entry points; GETCUM,LODCUM)
SUBMIT (entry points; CHECK,GETCHK)
GRAD1 (entry point; HEDRE1)
HEADPG (entry point; RSEP)
SUBGRD
GETIT
IPASS

REPORT NO. 16 VOLUME SUMMARY BY SECTION AND GROUP NUMBER

This is a group report showing the grades by section for a given volume. Student weekly and cumulative averages are also produced. The standard Report Generator deck is used to request this report, along with the Report Number and Report Content cards.

Functional flowcharts showing the modules for the Monitoring of Individual and Group Performance, and Group Remedial Instruction (GRI) Logic, are depicted in Charts 14 and 15. The Lesson Scratch file (Table 8) is used within the Report Generator Phase, as a work file as required by various reports.

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APPENDIX A

CHARTS

Chart Number	Title	Page
1	AIMS III Phase Structure	33
2	AIMS III System Structure	34
3	Course Structure	35
4	AIMS III Program Structure	36
5	Creating a Student Background File	37
6	Student Background and Enrollment	38
7	Course Description	39
8	Header File	40
9	File Maintenance and Updating	41
10	Student Response Tape	42
11	Master Response Tape	43
12	Question (MBO) File	44
13	Report Generation	45
14	Monitoring of Individual and Group Performance	46
15	System Logic-GRI Module	47

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AIMS III PHASE STRUCTURE

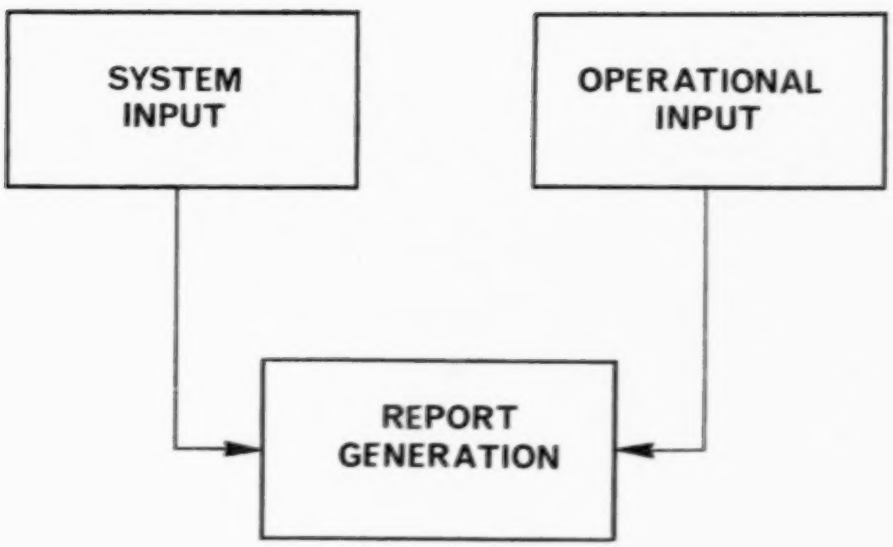

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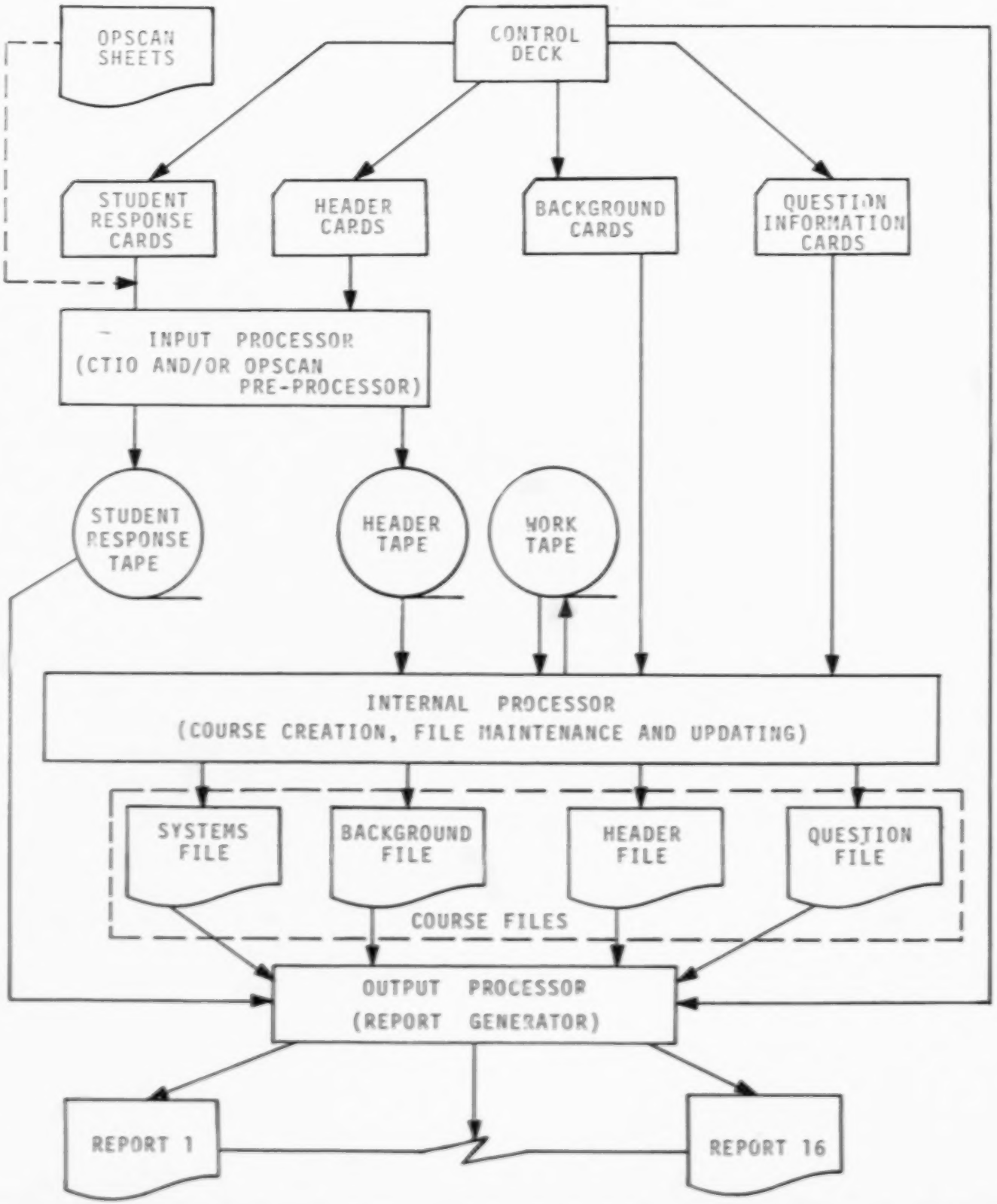
Chart 2

AIMS VERSION III

SYSTEM STRUCTURE



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COURSE STRUCTURE

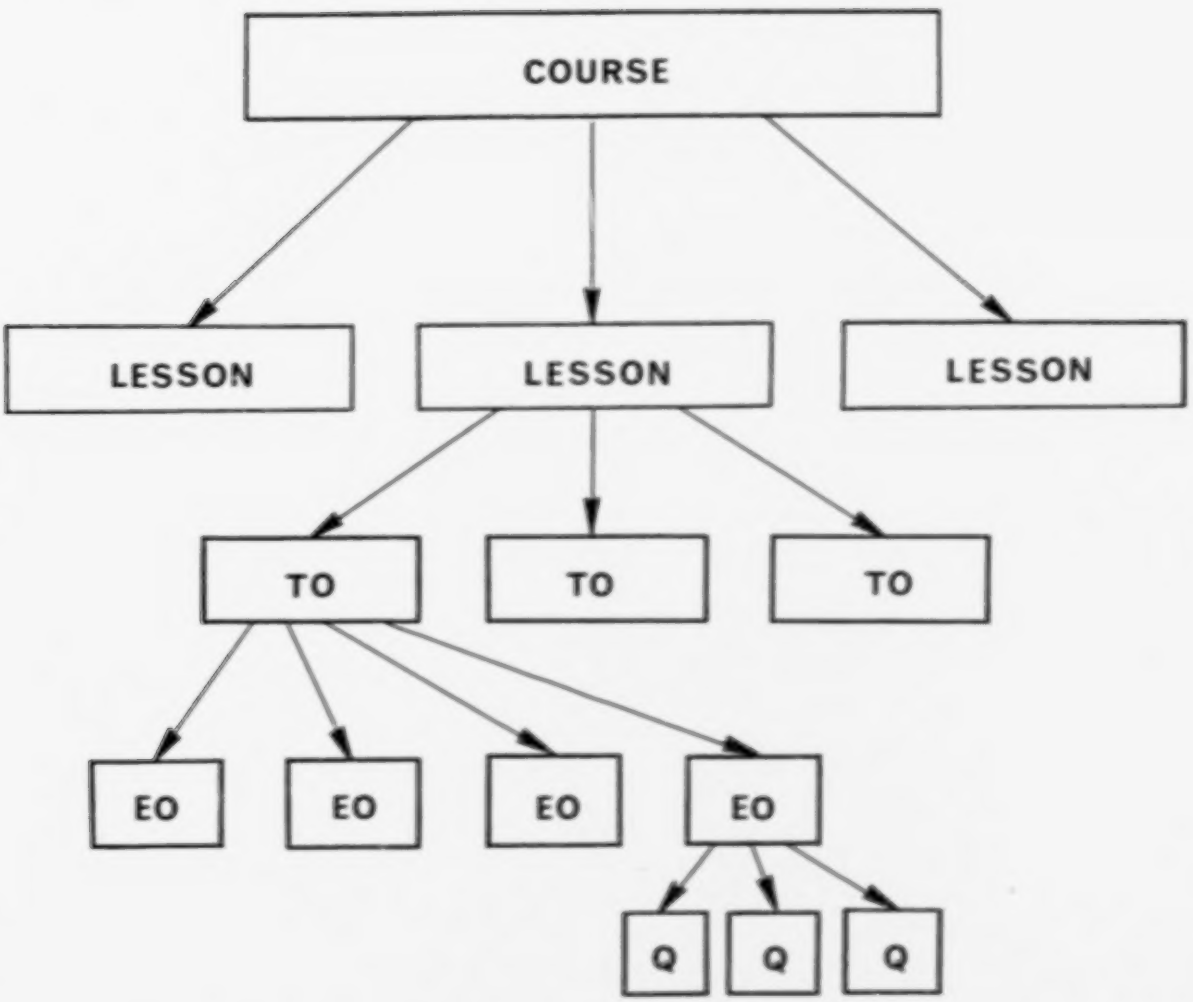

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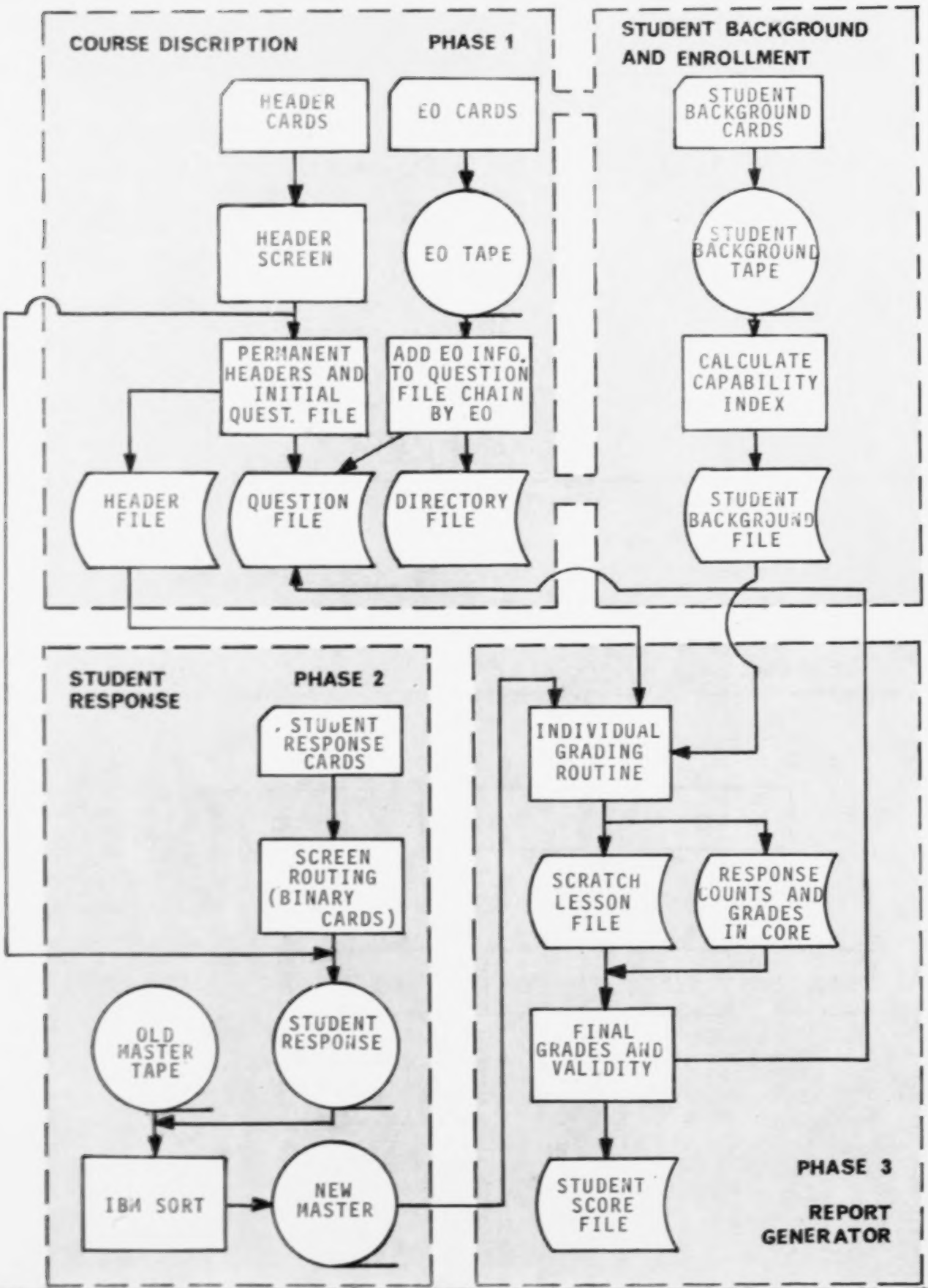
Chart 4

AIM III PROGRAM STRUCTURE



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AIMS VERSION III

CREATING A STUDENT BACKGROUND FILE

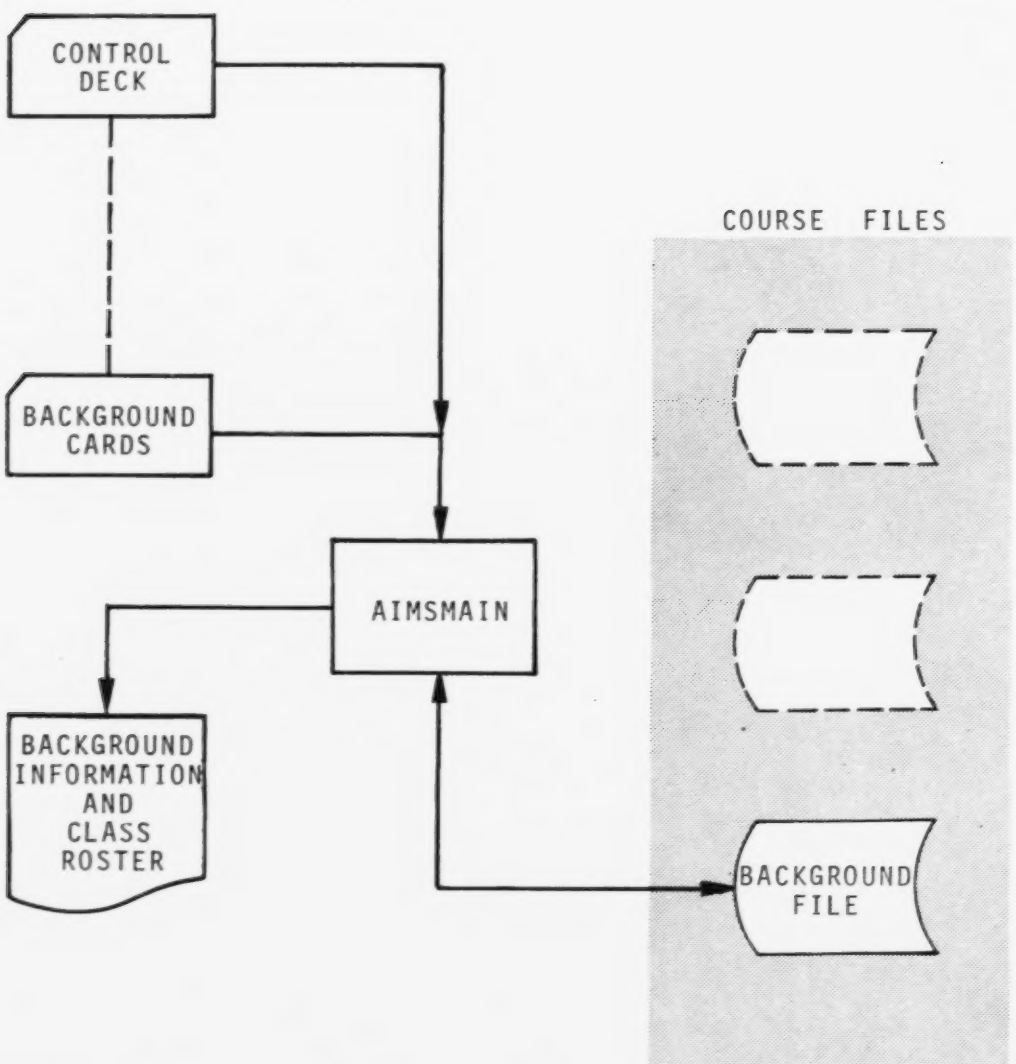

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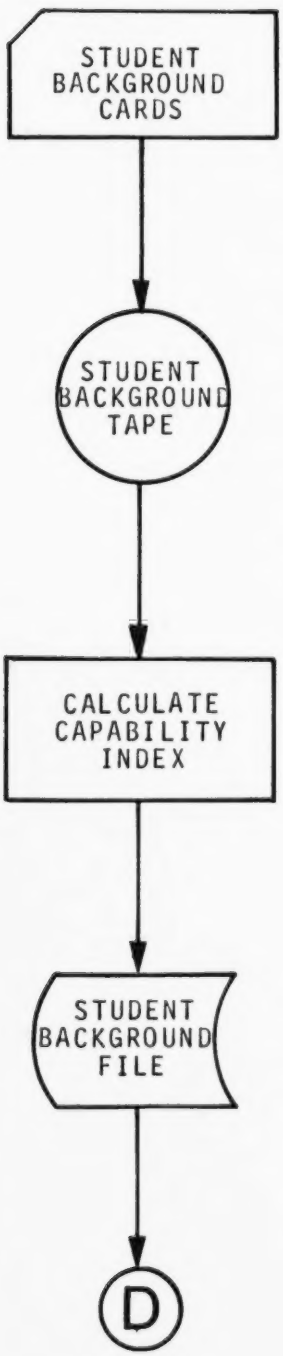
Chart 6

STUDENT BACKGROUND AND ENROLLMENT



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COURSE DESCRIPTION

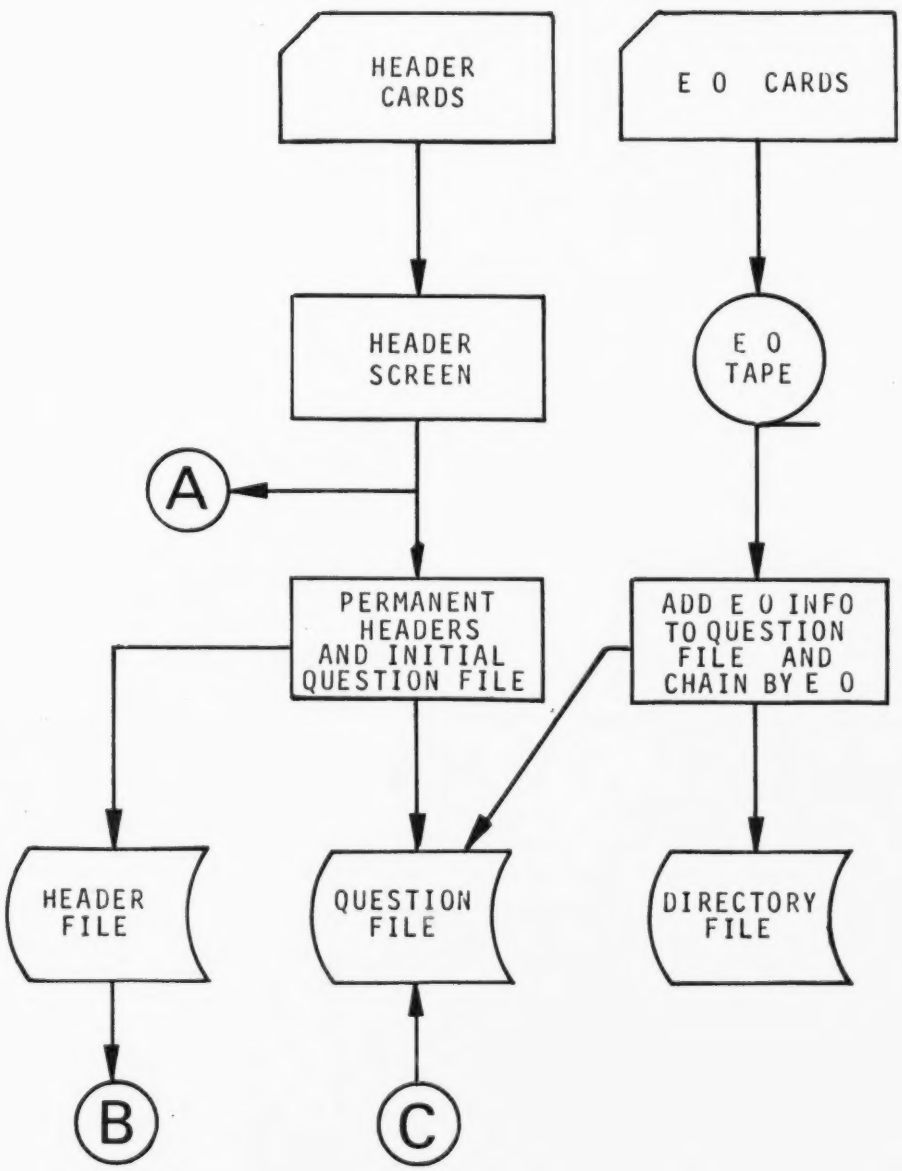

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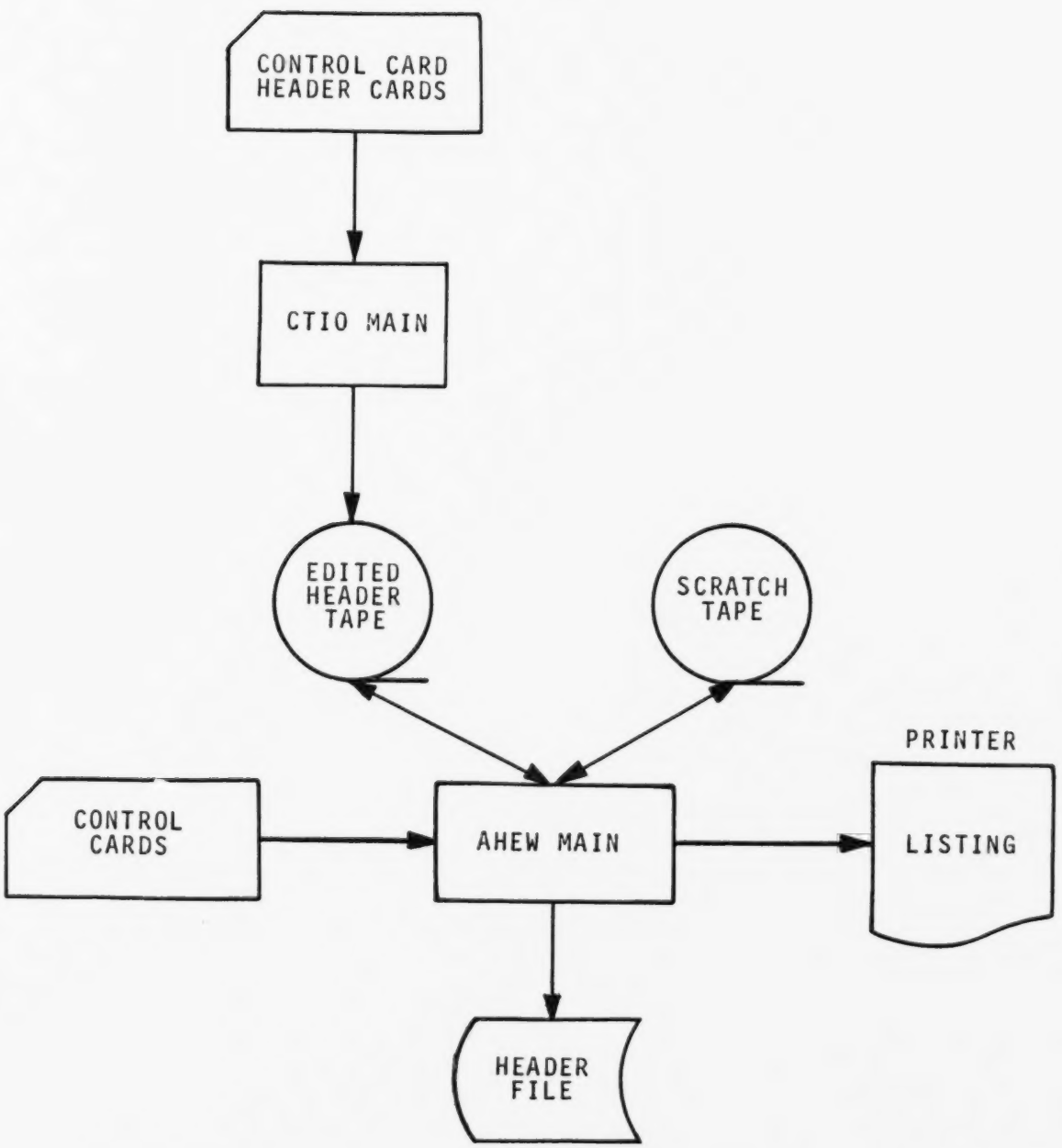
Chart 8

HEADER FILE



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AIMS VERSION III

FILE MAINTENANCE AND UPDATING

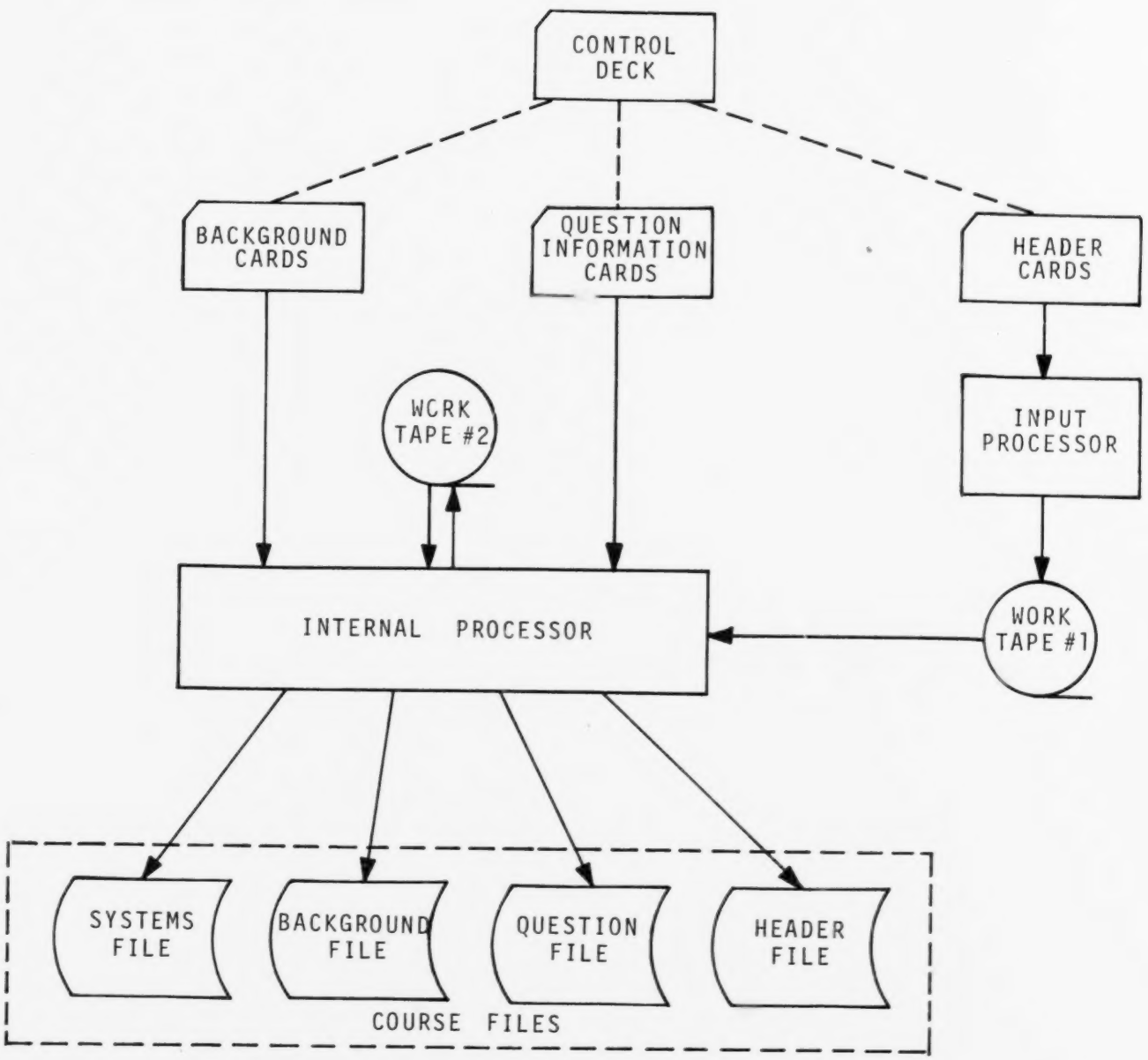

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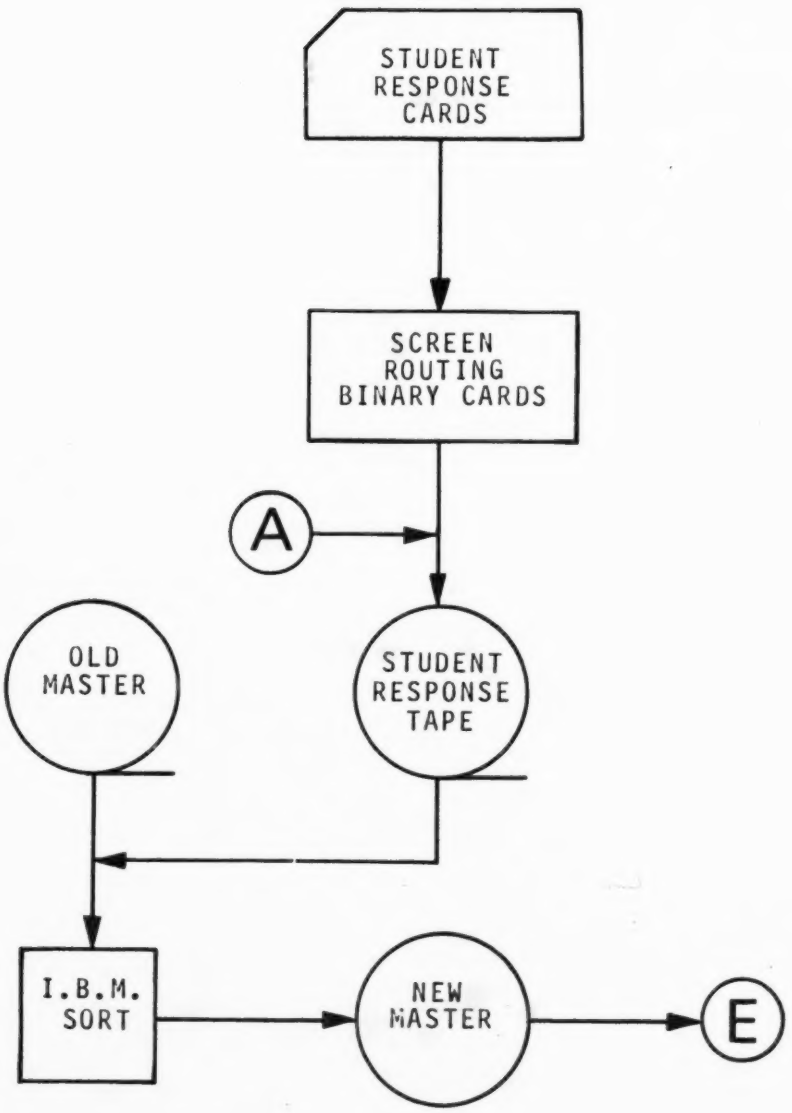
Chart 10

STUDENT RESPONSE



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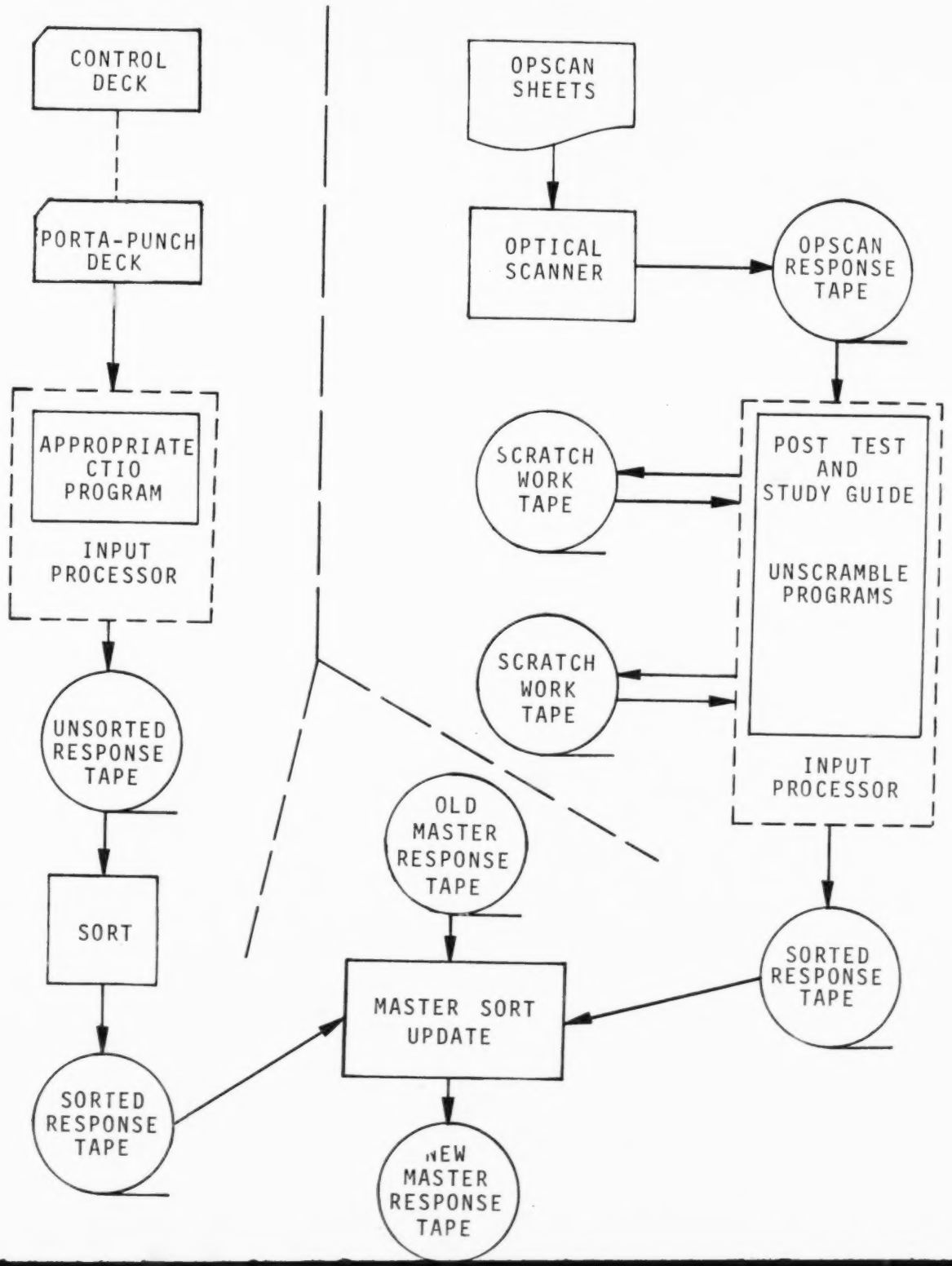
AIMS VERSION III

RESPONSE TAPE PRODUCTION



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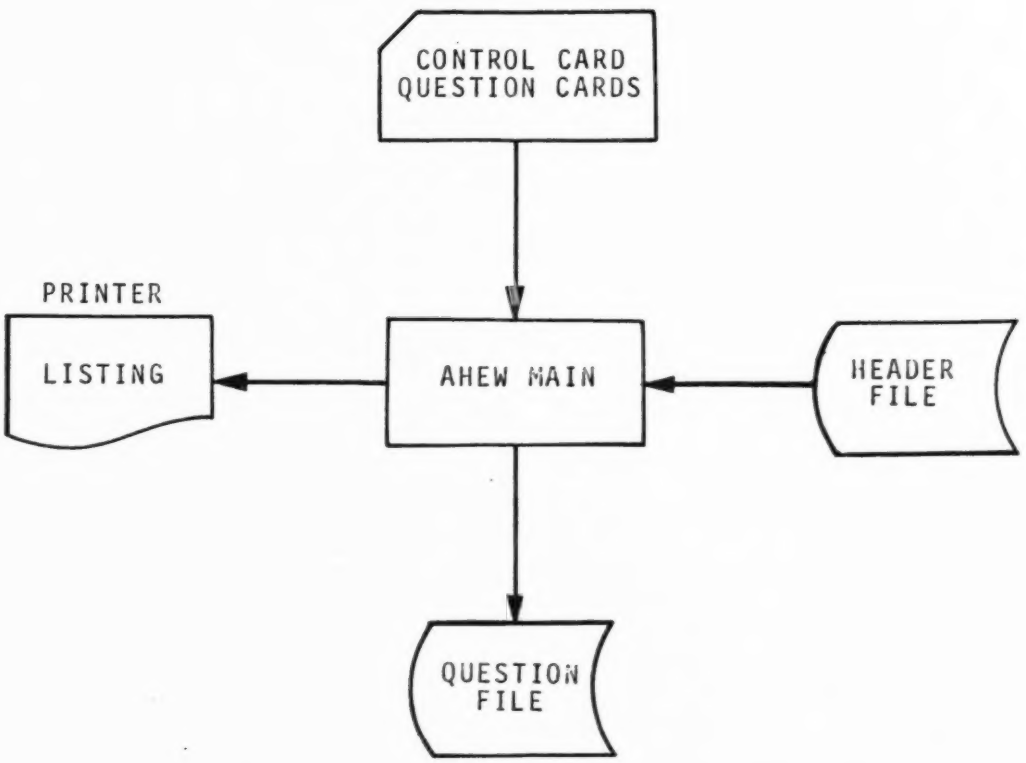
QUESTION FILE



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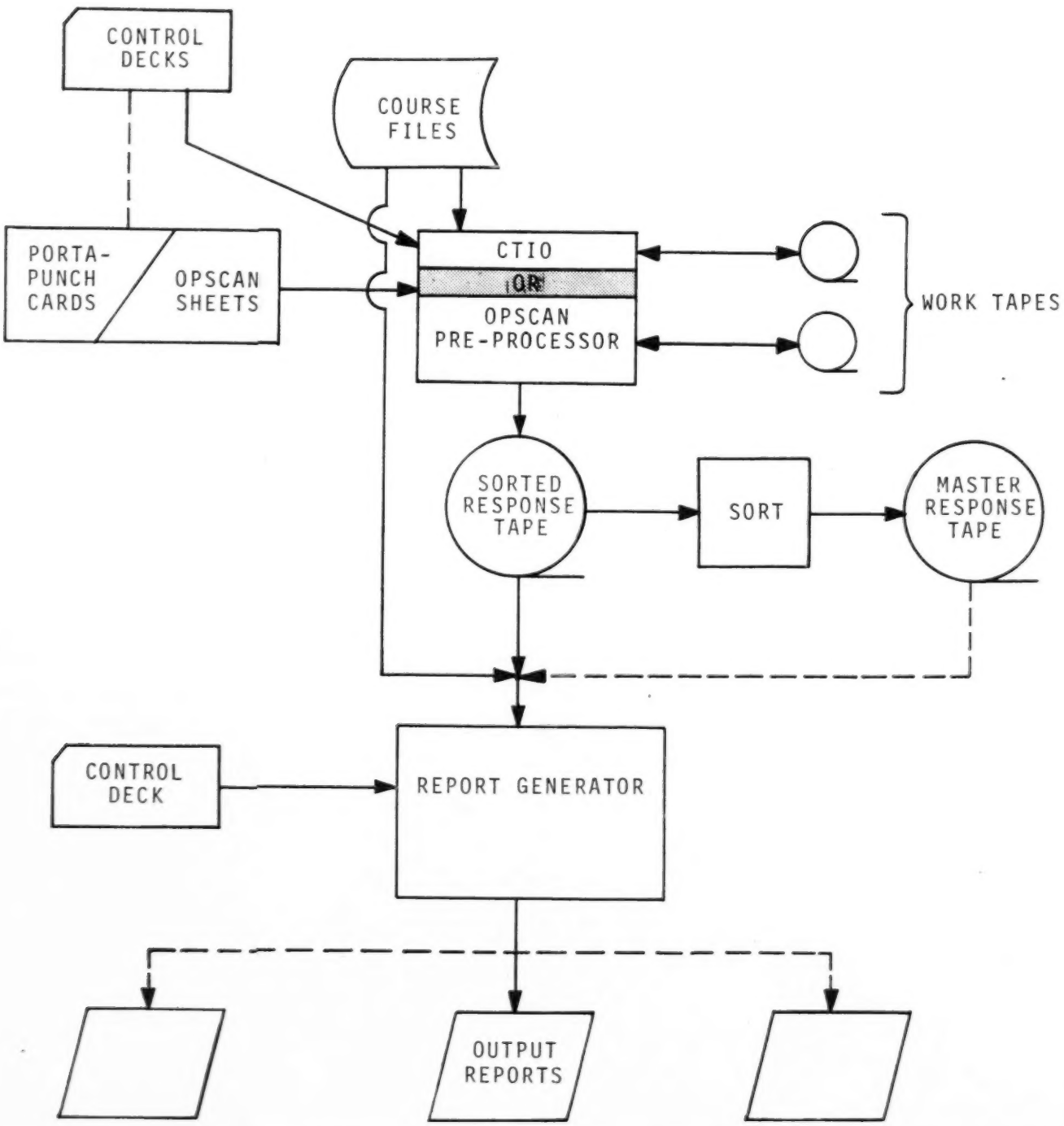
AIMS VERSION III

REPORT GENERATION



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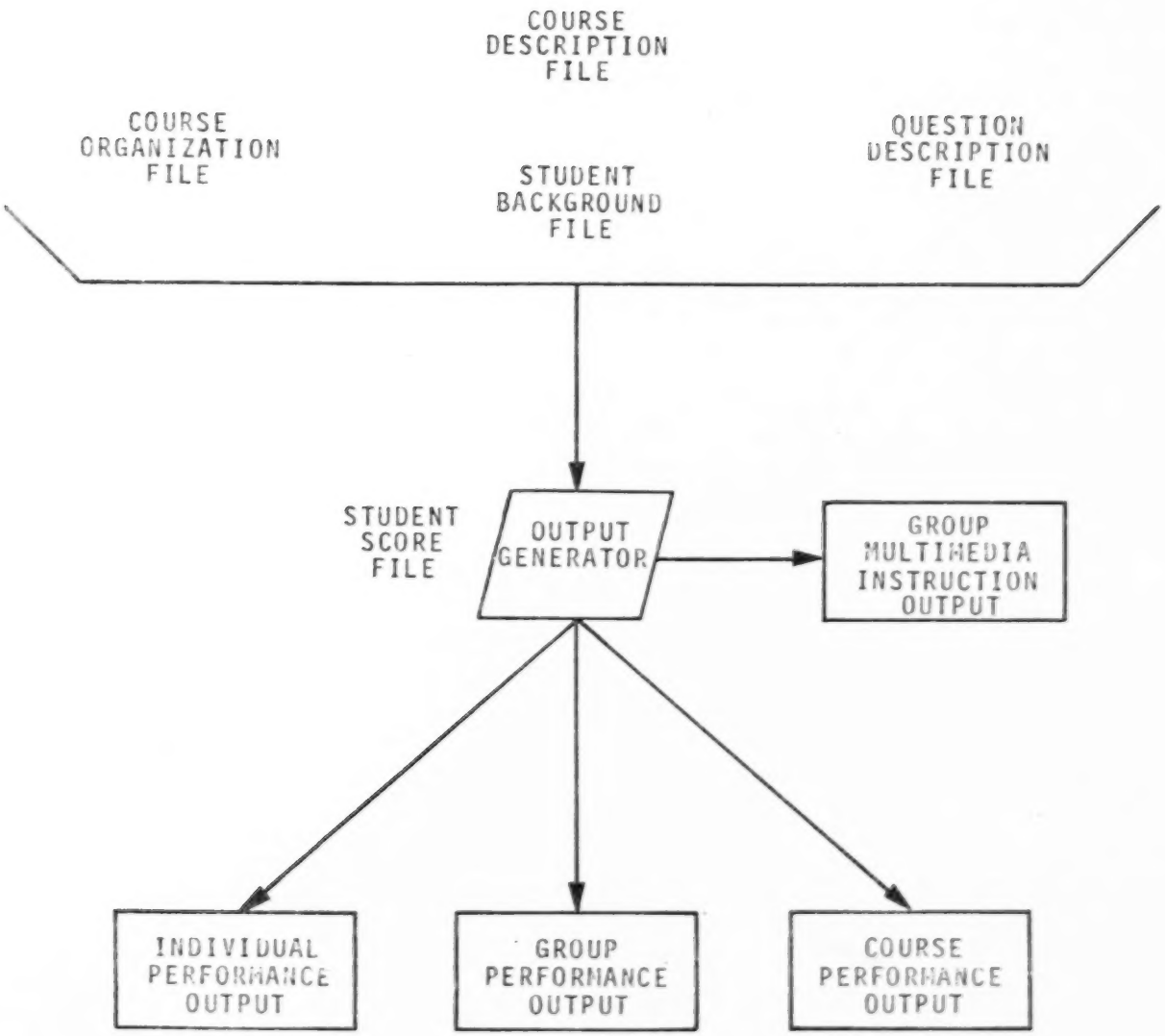
A360-670-46
Chart 14

MONITORING OF INDIVIDUAL AND GROUP PERFORMANCE



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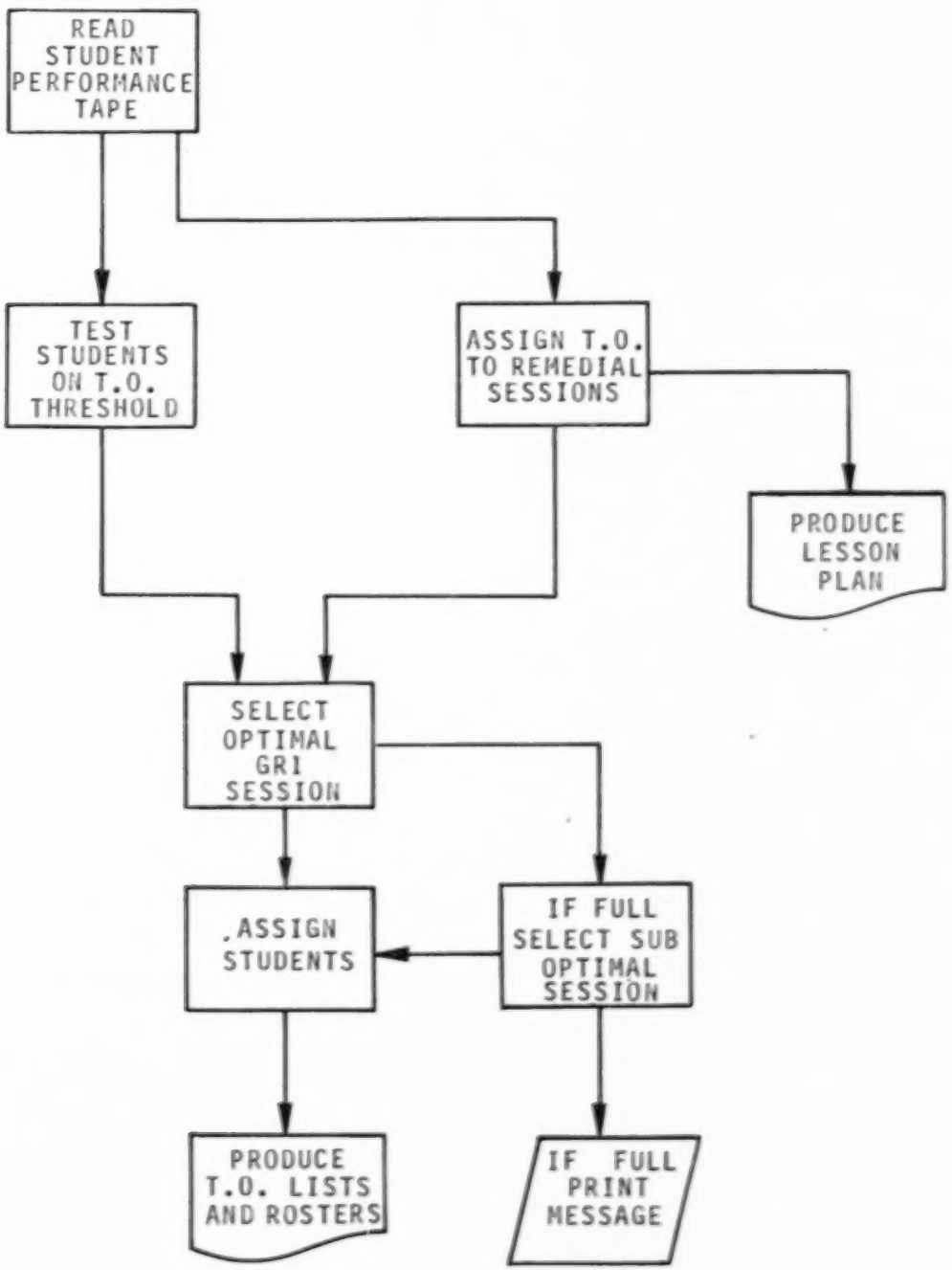
SYSTEM LOGIC-GRI MODULE


READ STUDENT PERFORMANCE TAPE
TEST STUDENTS ON T.O. THRESHOLD
ASSIGN T.O. TO REMEDIAL SESSIONS
PRODUCE LESSON PLAN
SELECT OPTIMAL GRI SESSION
ASSIGN STUDENTS
IF FULL SELECT SUB OPTIMAL SESSION
PRODUCE T.O. LISTS AND ROSTERS
IF FULL PRINT MESSAGE

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APPENDIX B

CONTROL
DECKS

JOB CONTROL STATEMENTS

Sample Deck Setups

The following deck setups include most possibilities and all existing copies of JCS at the time of this writing.

Control Deck No.	Type	Page
1	Physics 4001 L.I. Spring Semester Input Student Background cards	51
2	Physics 4001 L.I. Spring Semester Input Student Response cards	52
3	Physics 4001 L.I. Spring Semester Produce Report #1	53
4	Physics 4001 L.I. Spring Semester Produce Report #15	54
5	Physics 4001 N.Y. Spring Semester Input Student Background cards	55
6	Physics 4001 N.Y. Spring Semester Input Student Response cards	56
7	Physics 4001 N.Y. Spring Semester Produce Report #1	57
8	Physics 4001 N.Y. Spring Semester Produce Report #15	58
9	Math 3012 N.Y.I.T. Fall Semester Transfer Header Cards to Tape	59
10	Math 3012 N.Y.I.T. Fall Semester Store Headers in Header File	60
11	Math 3012 N.Y.I.T. Fall Semester Produce Report #11	61
12	Bowie College Math 3012 Fall Semester Input Student Background Cards	62

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Control Deck No.	Type	Page
13	Bowie College Math 3012 Fall Semester Input Question-Information (MBO) cards	63
14	Bowie College Math 3012 Fall Semester Produce Report #1	64
15	NAVY Physics S211 Fall Semester Input Student Background Cards	65
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CONTROL DECK #1

Physics 4001 L.I. Spring Semester
Input Student Background Cards

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BAKCGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000006,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9

// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000006,1,0,1070,9
// EXEC AHEMMAIN
((STUDENT-INPUT
*   *   *   *   *   *   *   *   *   *   *   *   *   *
*                                                     *
*    STUDENT BACKGROUND CARDS IN DESIRED COURSE STUDENT NUMBER  *
*    ORDER                                            *
*                                                     *
*   *   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #2

Physics 4001 L.I. Spring Semester
Input Student Response Cards

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000006,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000006,1,1070,9
// EXEC NYITCTIO
(( CARDS STUDENT01 5 04
*    *    *    *    *    *    *    *    *    *    *    *    *
*                                                            *
*      STUDENT PORTA-PUNCH RESPONSE CARDS IN ANY ORDER       *
*                                                            *
*    *    *    *    *    *    *    *    *    *    *    *    *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #3

Physics 4001 L.I. Spring Semester
Produce Report #1

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000006,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000006,1,0,1070,9
// EXEC REPTAIMS
((REPORT  01
01       030101124           4001 L.I.
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #4

Physics 4001 L.I. Spring Semester
Produce Report #15

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000006,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000006,1,0,1070,9
// EXEC REPTAIMS
((REPORT  15
15       03010112345          4001 L.I.
*   *    *    *    *    *    *    *    *    *    *    *    *
*                                                           *
*   SAMPLE REPORT CONTENT CARD IS FOR VOLUME 3 SO FOLLOWING*
*   IT SHOULD BE THE PREVIOUSLY GENERATED STUDENT VOLUME    *
*   STATISTIC CARDS FOLLOWED BY A SUFFICIENT NUMBER OF      *
*   BLANK CARDS FOR PUNCHING THE NEW STUDENT VOLUME STATIS-*
*   TIC CARDS.                                              *
*                                                           *
*   *    *    *    *    *    *    *    *    *    *    *    *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #5

Physics 4001 N.Y. Spring Semester
Input Student Background Cards

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-4001 LI MSTR',,081,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS-TWO',70/365,SD
// EXTENT SYS006,000006,1,0,1110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS-TWO',70/365,SD
// EXTENT SYS009,000006,1,0,1100,9
// EXEC AHEWMAIN
((STUDENT-INPUT
*   *   *   *   *   *   *   *   *   *   *   *   *   *
*                                                     *
*  STUDENT BACKGROUND CARDS IN DESIRED COURSE STUDENT  MBER  *
*  ORDER                                              *
*                                                     *
*   *   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #6

Physics 4001 N.Y. Spring Semester
Input Student Response Cards

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-4001 LI MSTR',,081,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS-TWO',70/365,SD
// EXTENT SYS006,000006,1,0,1110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS-TWO',70/365,SD
// EXTENT SYS009,000006,1,0,1100,9
// EXEC NY1ICTIO
((CARDS STUDENT01 5 04
*   *   *   *   *   *   *   *   *   *   *   *   *
*                                               *
*  STUDENT PORTA-PUNCH RESPONSE CARDS IN ANY ORDER *
*                                               *
*   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #7

Physics 4001 N.Y. Spring Semester
Produce Report #1

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-4001 LI MSTR',,081,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS-TWO',70/365,SD
// EXTENT SYS006,000006,1,0,1110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS-TWO',70/365,SD
// EXTENT SYS009,000006,1,0,1100,9
// EXEC REPTAIMS
((REPORT  01
01       030101124            4001 N.Y.
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #8

Physics 4001 N.Y. Spring Semester
Produce Report #15

```
// JOB 210012
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS011,X'181'
// ASSGN SYS010,X'182'
// TLBL IJSYS01,'AIMS-4001 LI MSTR',,081,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000006,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000006,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000006,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000006,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS-TWO',70/365,SD
// EXTENT SYS006,000006,1,0,1110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000006,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000006,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS-TWO',70/365,SD
// EXTENT SYS009,000006,1,0,1100,9
// EXEC REPTAIMS
((REPORT  15
15       03010112345          4001 N.Y.
*   *    *    *    *    *    *    *    *    *    *    *    *
*                                                           *
* SAMPLE REPORT CONTENT CARD IS FOR VOLUME 3 SO FOLLOWING   *
* IT SHOULD BE THE PREVIOUSLY GENERATED STUDENT VOLUME      *
* STATISTIC CARDS FOLLOWED BY A SUFFICIENT NUMBER OF BLANK  *
* CARDS FOR PUNCHING THE NEW STUDENT VOLUME STATISTIC CARDS*
*                                                           *
*   *    *    *    *    *    *    *    *    *    *    *    *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #9

Math 3012 N.Y.I.T. Fall Semester
Transfer Header Cards To Tape

```
// JOB 210012 AIMS MATH 3012 NYIT
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000009,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000009,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000009,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000009,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000009,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000009,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000009,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000009,1,0,1070,9
// EXEC CTIOMAIN
((CARDS HEADER 30 5 04
*   *   *   *   *   *   *   *   *   *   *   *   *
*                                                 *
* HEADER PORTA-PUNCH CARDS MUST BE ADDED TO THE FILE IN   *
* WHOLE VOLUME UNITS.  THE ONLY EXCEPTIONS ARE UPDATE CARDS*
* WHICH MAY BE USED TO CHANGE ANSWERS ONLY                *
*                                                 *
*   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #10

Math 3012 N.Y.I.T. Fall Semester
Store Headers In Header File

```
// JOB 210012 AIMS MATH 3012 NYIT
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL JSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL JSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000009,1,0,10,99
// DLBL JSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000009,1,0,700,59
// DLBL JSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000009,1,0,760,49
// DLBL JSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000009,1,0,810,249
// DLBL JSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000009,1,0,110,19
// DLBL JSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000009,1,0,130,569
// DLBL JSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000009,1,0,1060,9
// DLBL JSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000009,1,0,1070,9
// EXEC AHEWMAIN
((HEADER-CHECK
((HEADER-STORE
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #11

Math 3012 N.Y.I.T. Fall Semester
Produce Report #11

```
// JOB 210012 AIMS MATH 3012 NYIT
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000009,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000009,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000009,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000009,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000009,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000009,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000009,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000009,1,0,1070,9
// EXEC REPTAIMS
((REPORT  11
11       09050112345          MATH 3012
/*
/&
```

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CONTROL DECK #12

Bowie College Math 3012 Fall Semester
Input Student Background Cards

```
// JOB 210012 AIMS BOWIE COLLEGE
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000007,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000007,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000007,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000007,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000007,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000007,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000007,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000007,1,0,1070,9
// EXEC AHEWMAIN
((STUDENT-INPUT
*   *   *   *   *   *   *   *   *   *   *   *   *
*                                                 *
* STUDENT BACKGROUND CARDS IN DESIRED COURSE STUDENT *
* NUMBER ORDER                                    *
*                                                 *
*   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

FILMED FROM BEST AVAILABLE CO

CONTROL DECK #13

Bowie College Math 3012 Fall Semester
Input Question-Information (MBO) Cards

```
// JOB 210012 AIMS BOWIE COLLEGE
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000007,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000007,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000007,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000007,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000007,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000007,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000007,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000007,1,0,1070,9
// EXEC AHEWMAIN
((QUESTION-INFORMATION
*   *   *   *   *   *   *   *   *   *   *   *   *
*                                               *
* QUESTION INFORMATION (MBO) DATA CARDS         *
*                                               *
*   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

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CONTROL DECK #14

Bowie College Math 3012 Fall Semester
Produce Report #1

```
// JOB 210012 AIMS BOWIE COLLEGE
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000007,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000007,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000007,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000007,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000007,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000007,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000007,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000007,1,0,1070,9
// EXEC REPTAIMS
((REPORT  01
01       06050112345          BOWIE 3012
/*
/&
```

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CONTROL DECK #15

Navy Physics S211 Fall Semester
Input Student Background Cards

```
// JOB 210012 AIMS NAVY
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000003,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000003,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000003,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000003,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000003,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000003,1,0,130,569
// DLBL IJSYS008,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000003,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000003,1,0,1070,9
// EXEC AIMSMAIN
((STUDENT-INPUT
*   *   *   *   *   *   *   *   *   *   *   *   *
*                                                 *
* STUDENT BACKGROUND CARDS IN DESIRED COURSE STUDENT *
* NUMBER ORDER                                    *
*                                                 *
*   *   *   *   *   *   *   *   *   *   *   *   *
/*
/&
```

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CONTROL DECK #16

Navy Physics S211 Fall Semester
Produce Report #1

```
// JOB 210012 AIMS NAVY
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000003,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000003,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000003,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000003,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000003,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000003,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000003,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000003,1,0,1070,9
// EXEC REPTAIMS
((REPORT  01
01       010301124           PHYSICS S211
/*
/&
```

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CONTROL DECK #17

Navy Physics S211 Fall Semester
Produce Report #7

```
// JOB 210012 AIMS NAVY
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000003,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000003,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000003,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000003,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000003,1,0,110,19
// DLBL IJSYS07,'STUDENT SCORE FILE-AIMS',70/365,SD
// EXTENT SYS007,000003,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000003,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000003,1,0,1070,9
// EXEC REPTAIMS
((REPORT  07
07        100301124           PHYSICS S211
*   *     *     *     *     *     *     *     *     *     *     *     *
*                                                                     *
* SPEICAL DATA FOR REPORT 7 MUST BE INCLUDED IN THE FOLLOWING         *
* ORDER -                                                           *
*          1.  CUT-OFF LEVEL CARDS                                  *
*          2.  DELIMITER CARD                                       *
*          3.  MAXIMUM NUMBER OF STUDENTS AND SESSIONS              *
*          4.  PROFESSORS AND RESPECTIVE SESSION LOCATIONS          *
*                                                                     *
*   *     *     *     *     *     *     *     *     *     *     *     *
/*
/&
```

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CONTROL DECK #18

Navy Physics S211 Semester
Produce Report #15

```
// JOB 210012 AIMS NAVY
// ASSGN SYS001,X'180'
// ASSGN SYS002,X'191'
// ASSGN SYS003,X'191'
// ASSGN SYS004,X'191'
// ASSGN SYS005,X'191'
// ASSGN SYS008,X'191'
// ASSGN SYS009,X'191'
// ASSGN SYS010,X'182'
// ASSGN SYS011,X'181'
// TLBL IJSYS10
// TLBL IJSYS01,'AIMS-STUDENT DATA',70/365,67,1,1,1,3
// DLBL IJSYS02,'LESSON SCRATCH FILE-AIMS',70/365,SD
// EXTENT SYS002,000003,1,0,10,99
// DLBL IJSYS03,'HEADER FILE-AIMS',70/365,SD
// EXTENT SYS003,000003,1,0,700,59
// DLBL IJSYS04,'DIRECTORY FILE-AIMS',70/365,SD
// EXTENT SYS004,000003,1,0,760,49
// DLBL IJSYS05,'QUESTION FILE-AIMS',70/365,SD
// EXTENT SYS005,000003,1,0,810,249
// DLBL IJSYS06,'STUDENT BACKGROUND FILE-AIMS',70/365,SD
// EXTENT SYS006,000003,1,0,110,19
// DLBL IJSYS07,'STUDENT FILE-AIMS',70/365,SD
// EXTENT SYS007,000003,1,0,130,569
// DLBL IJSYS08,'TEXT FILE-AIMS',70/365,SD
// EXTENT SYS008,000003,1,0,1060,9
// DLBL IJSYS09,'SYSTEM FILE-AIMS',70/365,SD
// EXTENT SYS009,000003,1,0,1070,9
// EXEC REPTAIMS
((REPORT  15
15       040301124            PHYSICS S211
*   *    *    *    *    *    *    *    *    *    *    *    *
*                                                           *
* SAMPLE REPORT CONTENT CARD IS FOR VOLUME 4 SO FOLLOWING   *
* IT SHOULD BE THE PREVIOUSLY GENERATED STUDENT VOLUME STAT-
* ISTIC CARDS FOLLOWED BY A SUFFICIENT NUMBER OF BLANK CARDS
* FOR PUNCHING THE NEW STUDENT VOLUME STATISTIC CARDS.      *
*                                                           *
*   *    *    *    *    *    *    *    *    *    *    *    *
/*
/&
```

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APPENDIX C

CARD AND FORM LAYOUTS

Layout Number	Title	Page
1	Student Background and Enrollment Card	71
2	Student Drop Card	72
3	Course Header Card	73
4	Question (MBO) Descriptor Card	74
5	Student Response Port-a-Punch Card	75
6	Student Response OpScan Form	76
7	Report Content Card	77

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LAYOUT 1

Student Background and Enrollment Card

Column Number	Heading
1-25	Student Name
26-34	Social Security Number
35-37	SAT - Math
38-40	SAT - Verb
41,42	Average
43	Rank
44,45	Elementary Algebra
46,47	Geometry
48,49	Trigonometry
50,51	Intermediate Algebra
52,53	Calculus
54,55	Physics
56-58	I.Q.
59,60	Reading
61-63	Blank
64-75	Comments
76,77	Course
78-80	Student Number

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LAYOUT 2

Student Drop Card

Column Number	Heading
1-20	Student Name
21-77	Blank
78-80	Student Number

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LAYOUT 3

Course Header Card

Column Number	Heading
2,6,8	Number of Selections
24,26	Number of Questions
42,44	Course Number
48,50	Sequence Number
54,56	Type Number
60,62	Volume Number
66,68	Segment Number
80	Single or Double

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LAYOUT 4

Question (MBO) Descriptor Card

Column Numbers	Heading
1,2	Volume Number
3	Segment Number
4,5,6	TO Number
7,8	EO Number
9-42	MBO Description
43,44	Learning Category
48	Type
49,50	Question Number
51	Correct Answer
52-78	Prescription
79,80	Course Number

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LAYOUT 5

Port-a-Punch
Student Response Card

Column Number	Heading
2,6,8	CSN (Course Student Number)
	Date
12,14	Month
18,20	Day
24,26	Year
	Completion Time
30,32	Hours
36,38	Minutes
42,44	Course Number
48,50	Sequence Number
54,56	Type
60,62	Volume
66,68	Segment
72,74,76,78,80	Student I.D. Number
Shaded Columns Between Columns of Data	Responses

The students answer to each question is punched in the shaded columns on the card.

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LAYOUT 6

Student Response OpScan Form

Data Content

Student Name

Date

Social Security Number

Course Number

Completion Time

Volume

Segment

Type

Page Number

The student fills in the answer by marking the appropriate box (multiple choice) with a dark pencil.

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LAYOUT 7

Report Content Card

Column Number	Heading
1,2	Specific Report Number Requested
10,11	Segment (Week, Volume, Lesson or Unit Number)
12,13	Highest Segment Number (in above)
14,15	Section Information Number
16-20	Test Type Numbers Referred to in Requested Report
30-42	Course Name

This card follows the Report Number Card in the Request Deck. Some information is not required for every report. In those cases, blanks may be left for non-essential information.

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APPENDIX D

TABLES

Table Number	Name	Page
1	Student Background and Enrollment File Structure	81
2	Header File Structure	82
3	Question (MBO) File Structure	83
4	Master Response File Structure	84
5	Directory File Structure	85
6	Score File Structure	86
7	Lesson Scratch File	87

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TABLE 1

Student Background and Enrollment
File Structure

Work Number	Name	Comments
1	Course Student Number	Registration number assigned to student by program
2	Course Number	
3	Student Name	
4	Student I.D. Number	
5	Drop Flag	Indicator for student dropping course
6	Capability Index	See text
7	SAT - Math	Math score on SAT
8	SAT - Verb	Verbal score on SAT
9	Average	High School Average
10	Rank	High School rank in class
11	Elementary Algebra Grade	
12	Geometry Grade	
13	Trigonometry Grade	
14	Intermediate Algebra Grade	
15	Physics Grade	
16	I.Q.	Intelligence Quotient
17	Math Achievement Score	
18	Rank	Rank at Academy
19	Comments File	

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TABLE 2

Header File Structure

Word Number	Name	Comments
1	Answer Matrix	The correct answer for each question on a test, study guide, or assign.
2	Number of Questions	The total number of questions in a test, study guide, or assign.
3	Number of Selections	Total number of possible selections-and is equal to: (number of selections per question)x(number of question in the test)
4	Course Number	
5	Sequence Number	Equal to one for a single card record; equal to two for the second card of a double card record.
6	Type	Applicable type number for the test, e.g., Post test = 2
7	Volume	Number applicable (applies to a subset of volume when more than one of a same type appears in the volume)
8	Segment	Number applicable (applies to week and lesson number also)
9	Single or Double	Indicates whether there is to be one or two columns of per questions per card
10	Pointer to Directory Record	

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TABLE 2 (continued)

Word Number	Name	Comments
11	Pointer to Question File	
12	Error Flag	

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TABLE 3

Question (MBO) File Structure

Word Number	Name	Comments
1	Volume Number	Appropriate Volume (lesson, week) number
2	Segment Number	Applies to a subset of volume when more than one of a same type appears in the volume
3	Terminal Objective (TO) Number	Determined by course structure
4	Enabling Objective (EO)	Determined by course structure
5	MBO Description	34 character description of the MBO
6	Learning Category (LC)	Determined by course structure
7	Type	Refers to test type (as in Header File)
8	Question Number	Same number as in Header File
9	Correct Answer	Same answer as in Header Answer Matrix
10	Remedial Prescription	Message to student for remedial study
11	Course Number	Must be the same as in Header File
12	Chain Pointer	
13	TO Pointer	
14	EO Pointer	
15	Prescription Pointer	
16	SKIL 1	Code for Internal Use

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TABLE 3 (continued)

Word Number	Name	Comments
17	SKIL 2	Code for Internal Use
18	Correct Number Right	Number of times answered correctly
19	Group Counters for Performance Quartiles	
20	Counters for Responses	
21	Key Words which Describe Question	

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TABLE 4

Master Response File Structure

Word Number	Name	Description
1	Lesson	Lesson ID Number
2	Course Student Number	Registration Number
3	Segment	Course Segment ID
4	Type	Type of Deck
5	Course	Course ID
6	Sequence	Number of Cards in Deck
7-9	ID Number	Student ID Number
10,11	Reserved	
12	Number of Questions Answered	
13	Year	
14	Month	
15	Day	
16	Hours	Time Taken to Complete
17	Minutes	
18-65	Answers	Up to 48 Answers to Course Unit

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TABLE 5

Directory File Structure

Word Number	Name	Comments
1-99	Pointers to Question File for T.O. 1-99	

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TABLE 6

Score File Structure

Word Number	Description
1	Course Student Number
2	Highest Volume Number Processed by Report 15
3	Sum of Post-Test Scores
4	Number of Post-TestsProcessed
5	Sum of Homework Scores
6	Number of Homeworks Processed
7	Highest Volume Number Processed by Report 14
8	Sum of Problem Achievement Scores
9	Number of Problem Achievements Calculated
10	Sum of Post-Test Achievement Scores
11	Number of Post-Test Achievements Calculated
12	Sum of Net Achievement Scores
13	Number of Net Achievements Calculated
14	Sum of Relative Achievement Deviation Scores
15	Number of Relative Achievement Deviations Calculated

The Student Score File is structured to contain both group and individual records.

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TABLE 7

Lesson Scratch File Structure

Word Number	Name
1	Lesson
2	Course Student Number
3	Segment
4	Type
5	Course
6	Sequence
7-9	ID Number
10	Reserved
11	Grade
12	Number of Questions Answered
13	Year
14	Month
15	Day
16	Hours
17	Minutes
18-65	Number of Correct Punches Per Question